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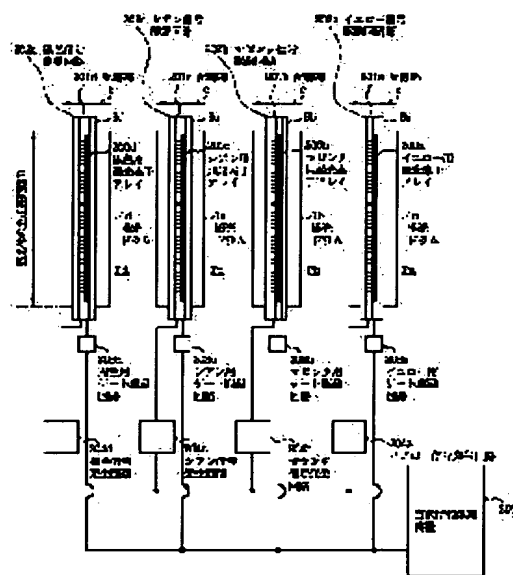
## (54) IMAGE-FORMING APPARATUS AND LIGHT-EMITTING APPARATUS

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To reduce costs at a light-emitting element array part in an image-forming apparatus and eliminate characteristic compensation among element arrays by using a one-chip light-emitting element array and constituting four one-chip light-emitting element arrays arranged for each photosensitive body of a single substrate.

**SOLUTION:** Each of a yellow light-emitting element array 200a, a magenta light-emitting element array 200b, a cyan light-emitting element array 200c and a black light-emitting element array 200d uses a one-chip light-emitting element array arranged to cover the whole area of a main scan distance in a main scan direction when each photosensitive drum rotates and moves.

Each light-emitting element array is integrated into one chip having a plurality of light-emitting elements arranged with a high resolution not lower than, e.g. 600 dpi to cover the whole area of the main scan distance of the photosensitive body. Preferably, the one-chip light-emitting element array used for the light-emitting element arrays 200a, 200b, 200c, 200d is formed of a single substrate which is cut and separated to four to obtain the arrays.



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CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE  
INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

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[Translation done.]

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**CLAIMS**

[Claim(s)]

[Claim 1] a. The light-emitting-device array which has the light emitting device arranged to the main scanning direction to the move direction of a photo conductor and b. photo conductor, [ two or more ] The SWITCHINGU element array which has two or more SWITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SWITCHINGU element array into two or more groups, and for every group of two or more this classified SWITCHINGU elements For every 1st wiring group to which the 1st terminal of a SWITCHINGU element is connected in common, and this SWITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SWITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to an exposure means to perform exposure to the aforementioned photo conductor, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- the image formation equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, the voltage signal of another side polarity may be impressed and the capacitor based on this voltage signal may discharge simultaneously

[Claim 2] The aforementioned light emitting device is image formation equipment according to claim 1 which is the element which has an organic light emitting device.

[Claim 3] The aforementioned photo conductor is image formation equipment according to claim 1 which is an electrophotography photo conductor.

[Claim 4] The aforementioned electrophotography photo conductor is image formation equipment according to claim 3 which is an organic electrophotography photo conductor.

[Claim 5] The aforementioned electrophotography photo conductor is image formation equipment according to claim 3 which is an inorganic electrophotography photo conductor.

[Claim 6] The aforementioned inorganic electrophotography photo conductor is image formation equipment according to claim 5 which is an amorphous silicon electrophotography photo conductor.

[Claim 7] It is image formation equipment according to claim 1 whose 2nd terminal of the above the aforementioned SWITCHINGU element is TFT, and the 1st terminal of the above is a gate terminal, and is a source terminal.

[Claim 8] The aforementioned SWITCHINGU element array is image formation equipment according to claim 1 by which one chip fabrication is carried out.

[Claim 9] The aforementioned simultaneous luminescence circuit is image formation equipment

according to claim 1 which is the circuit which has the sample hold circuit.

[Claim 10] a. The light-emitting-device array which has the light emitting device arranged to the main scanning direction to the move direction of a photo conductor and b. photo conductor, [ two or more ] The SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element The 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the exposure means equipped with two or more light-emitting-device array blocks which have the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, c. Simultaneous luminescence of the 1 light-emitting-device array block is carried out. two or more light-emitting-device array blocks Every block The 1st scanning signal is impressed to the 1st driving means made to operate sequentially and the 1st wiring group of d. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- the image formation equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, the voltage signal of another side polarity may be impressed and the capacitor based on this voltage signal may discharge simultaneously

[Claim 11] The aforementioned simultaneous luminescence circuit is image formation equipment according to claim 10 which is the circuit which has the sample hold circuit.

[Claim 12] a. The light-emitting-device array which has two or more trains and the light emitting device which carried out multi-line arrangement to a photo conductor and b. photo conductor, Have two or more SUITCHINGU elements with which it was made to connect for every light emitting device of a multi-line, and the SUITCHINGU element of one line is made to correspond for every line. The SUITCHINGU element array which arranged this SUITCHINGU element to the multi-line, Classify the SUITCHINGU element for every line into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to an exposure means to perform exposure to the aforementioned photo conductor, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- the image formation equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, the voltage signal of another side polarity may be impressed and the capacitor based on this voltage signal may discharge simultaneously

[Claim 13] The aforementioned simultaneous luminescence circuit is image formation equipment according to claim 12 which is the circuit which has the sample hold circuit.

[Claim 14] a. The light-emitting-device array which has two or more trains and the light emitting device which carried out multi-line arrangement to a photo conductor and b. photo conductor, Have two or more SUITCHINGU elements with which it was made to connect for every light

emitting device of a multi-line, and the SWITCHINGU element of one line is made to correspond for every line. The SWITCHINGU element array which arranged this SWITCHINGU element to the multi-line, Classify the SWITCHINGU element for every line into two or more groups, and for every group of two or more this classified SWITCHINGU elements The 1st wiring group in every [ to which the 1st terminal of a SWITCHINGU element is connected in common ] line, Two or more 2nd wiring groups which wired independently for every SWITCHINGU element for every line of this the line whole [ to which the 2nd terminal of a SWITCHINGU element is connected ], It has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. and by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to the 1st wiring group of at least one line of the 1st wiring groups of the exposure means and c. multi-line which perform exposure to the aforementioned photo conductor. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. at least one 2nd wiring group in two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the above -- even if few -- the 1st wiring group of one line -- the 2nd scanning signal -- impressing -- the above -- even if few -- the one 2nd wiring group -- this -- The 1st driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this information signal may discharge simultaneously, And the 1st scanning signal is impressed to the 1st wiring group of the other bank of the 1st wiring groups of d. multi-line. Make it synchronize with the 1st scanning signal, and the voltage signal of another side polarity is impressed. other 2nd wiring groups of two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and, on the other hand, a polar voltage signal is impressed. the above -- the 1st wiring group of an other bank -- the 2nd scanning signal -- impressing -- the 2nd wiring group besides the above -- this -- Image formation equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously.

[Claim 15] The aforementioned simultaneous luminescence circuit is image formation equipment according to claim 14 which is the circuit which has the sample hold circuit.

[Claim 16] The light-emitting-device array which has the light emitting device arranged to \*\* on the other hand, the SWITCHINGU element array which has two or more SWITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, [ two or more ] Classify this SWITCHINGU element array into two or more groups, and for every group of two or more this classified SWITCHINGU elements For every 1st wiring group to which the 1st terminal of a SWITCHINGU element is connected in common, and this SWITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SWITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. The 1st scanning signal is impressed to a luminescence means to perform simultaneous luminescence from this light-emitting-device array, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- the luminescence equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, the voltage signal of another side polarity may be impressed and the capacitor based on this voltage signal may discharge simultaneously

[Claim 17] The aforementioned light emitting device is luminescence equipment according to claim 16 which is the element which has an organic light emitting device.

[Claim 18] It is luminescence equipment according to claim 16 whose 2nd terminal of the above the aforementioned SWITCHINGU element is TFT, and the 1st terminal of the above is a gate terminal, and is a source terminal.

[Claim 19] The aforementioned SWITCHINGU element array is luminescence equipment according to claim 16 by which one chip fabrication is carried out.

[Claim 20] The aforementioned simultaneous luminescence circuit is luminescence equipment according to claim 16 which is the circuit which has the sample hold circuit.

[Claim 21] The light-emitting-device array which has the light emitting device arranged to \*\* on the other hand, the SWITCHINGU element array which has two or more SWITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, [ two or more ] Classify this SWITCHINGU element array into two or more groups, and for every group of two or more this classified SWITCHINGU elements For every 1st wiring group to which the 1st terminal of a SWITCHINGU element is connected in common, and this SWITCHINGU element The 2nd wiring group to which the 2nd terminal of a SWITCHINGU element is connected, and the luminescence means equipped with two or more light-emitting-device array blocks which have the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, c. Simultaneous luminescence of the 1 light-emitting-device array block is carried out. two or more light-emitting-device array blocks Every block The 1st scanning signal is impressed to the 1st driving means made to operate sequentially and the 1st wiring group of d. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- the luminescence equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, the voltage signal of another side polarity may be impressed and the capacitor based on this voltage signal may discharge simultaneously

[Claim 22] The aforementioned simultaneous luminescence circuit is luminescence equipment according to claim 21 which is the circuit which has the sample hold circuit.

[Claim 23] It has the light-emitting-device array which has two or more trains and light emitting devices which carried out multi-line arrangement, and two or more SWITCHINGU elements with which it was made to connect for every light emitting device of a multi-line. The SWITCHINGU element array which the SWITCHINGU element of one line was made to correspond for every line, and was arranged to the multi-line by this, Classify the SWITCHINGU element for every line into two or more groups, and for every group of two or more this classified SWITCHINGU elements For every 1st wiring group to which the 1st terminal of a SWITCHINGU element is connected in common, and this SWITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SWITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. The 1st scanning signal is impressed to the luminescence means of this light-emitting-device array which carries out simultaneous luminescence, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- the luminescence equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, the voltage signal of another side polarity may be impressed and the

capacitor based on this voltage signal may discharge simultaneously

[Claim 24] The aforementioned simultaneous luminescence circuit is luminescence equipment according to claim 23 which is the circuit which has the sample hold circuit.


[Claim 25] Have the light-emitting-device array which has two or more trains and light emitting devices which carried out multi-line arrangement, and two or more SWITCHINGU elements with which it was made to connect for every light emitting device of a multi-line, and the SWITCHINGU element of one line is made to correspond for every line. by this The SWITCHINGU element array and the SWITCHINGU element for every line which were arranged to the multi-line are classified into two or more groups. The 1st wiring group for every [ to which the 1st terminal of a SWITCHINGU element is connected in common for every group of two or more classified this SWITCHINGU elements ] line, Two or more 2nd wiring groups to which the 2nd terminal of a SWITCHINGU element is connected for every SWITCHINGU element for every line of this and which wired independently for every line, And the luminescence means which has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, and carries out simultaneous luminescence from this light-emitting-device array, c. The 1st scanning signal is impressed to the 1st wiring group of at least one line of the 1st wiring groups of a multi-line. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. at least one 2nd wiring group in two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the above -- even if few -- the 1st wiring group of one line -- the 2nd scanning signal -- impressing -- the above -- even if few -- the one 2nd wiring group -- this -- The 1st driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this information signal may discharge simultaneously, And the 1st scanning signal is impressed to the 1st wiring group of the other bank of the 1st wiring groups of d. multi-line. Make it synchronize with the 1st scanning signal, and the voltage signal of another side polarity is impressed. other 2nd wiring groups of two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. the above -- the 1st wiring group of an other bank -- the 2nd scanning signal -- impressing -- the 2nd wiring group besides the above -- this -- the luminescence equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, a polar voltage signal may be impressed on the other hand and the capacitor based on this voltage signal may discharge simultaneously

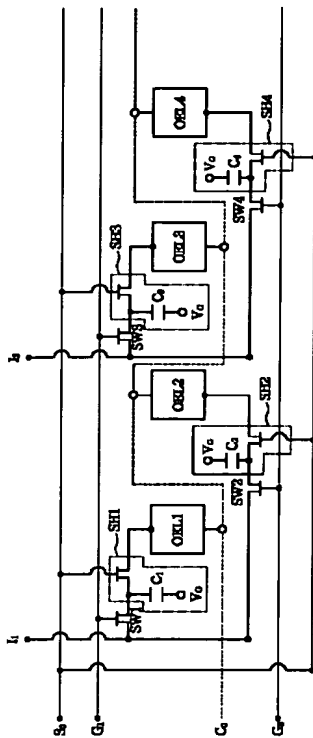
[Claim 26] The aforementioned simultaneous luminescence circuit is luminescence equipment according to claim 25 which is the circuit which has the sample hold circuit.

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Drawing selection [R pr sentative drawing] 



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[JP,11-198433,A]

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the image formation equipment which is made to correspond for every photo conductor, forms cyanogen, a Magenta, yellow, and a black picture, and forms a color picture by compounding these pictures by arranging two or more photo conductors to a single tier, and using each photo conductor independently especially, about the luminescence equipment used for the image formation equipment and this like an electrophotography copying machine.

[0002]

[Description of the Prior Art] The laser beam light source is prepared as an image exposure means for every four electrophotography photo conductors made the single tier arrange, respectively. The oscillation of the four laser beam light sources each is made to control based on cyanogen, a Magenta, yellow, and each black image information. by this The laser beam light source image formation equipment which forms a color picture is known by making cyanogen, a Magenta, yellow, and an electrostatic black latent image form for every four electrophotography photo conductors, and making these electrostatic latent images develop, and making the development picture of these plurality compound.

[0003] Moreover, it changes into the laser beam light source used with the aforementioned image formation equipment, and the Light Emitting Diode light source image formation equipment which has arranged the four Light Emitting Diode light sources for every photo conductor as the light source in which cyanogen, a Magenta, yellow, and an electrostatic black latent image are made to form is also known.

[0004] It is difficult for the present condition it to make in agreement correctly both the main scanning direction of each laser beam and the direction of vertical scanning every four laser beam light sources arranged for every four photo conductors, since the aforementioned laser beam light source image formation equipment makes in agreement cyanogen, a Magenta, yellow, and each black picture and makes them compound.

[0005] On the other hand, with the aforementioned Light Emitting Diode light source image formation equipment, although it could be made to realize comparatively simply, since the demand which makes in agreement both above-mentioned main scanning direction and directions of vertical scanning needed to use two or more Light Emitting Diode chips as the connector type Light Emitting Diode element which it comes to tie to a single tier in addition to Light Emitting Diode being expensive, it became still more expensive. Furthermore, since, as for a Light Emitting Diode chip, the luminescence property was different for every chip, it was made to expose by the same connector type Light Emitting Diode element as the above, and the exposure condition was different for every luminescence property of a chip in main scanning direction, consequently the horizontal-scanning exposure whole region to movement of a photo conductor worsened picture repeatability of main scanning direction.

[0006] Moreover, in the electrophotography copying machine which can form a color picture, the luminescence property between two or more of said connector type Light Emitting Diode elements arranged for two or more photo conductors of every even in this case although it needed to tie and the mold Light Emitting Diode element needs to be arranged for two or more photo conductors of every was different, and the difficult demand which has been arranged for every photo conductor and which ties and adjusts the luminescence property between mold Light Emitting Diode elements had newly occurred.

[0007]

[Problem(s) to be Solved by the Invention] The image formation equipment with which Object of the Invention used the connector type Light Emitting Diode element for the aligner, The variation of the luminescence property in main scanning direction which had become a problem especially in the electrophotography copying machine is canceled. The number of drive wiring and the number of drive circuit chips of a printer head are reduced sharply, luminescence brightness is raised to sufficient size with this, and it is in the point which brings forward the process speed of an electrophotography copying machine sharply by this.

[0008] Furthermore, Object of the Invention increases the luminescence time of a light emitting device sharply, and is in longer \*\*\*\* sharply about the life of a printer head.

[0009]

[Means for Solving the Problem] The light-emitting-device array which has the light emitting device which has arranged two or more this inventions the 1st to the main scanning direction to the move direction of a. photo conductor and b. photo conductor, The SWITCHINGU element array which has two or more SWITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SWITCHINGU element array into two or more groups, and for every group of two or more this classified SWITCHINGU elements For every 1st wiring group to which the 1st terminal of a SWITCHINGU element is connected in common, and this SWITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SWITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to an exposure means to perform exposure to the aforementioned photo conductor, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- The driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously, To the image formation equipment which \*\*\*\*, it has the 1st feature. to the 2nd a. photo conductor, b. The light-emitting-device array which has the light emitting device arranged to the main scanning direction to the move direction of a photo conductor, [ two or more ] The SWITCHINGU element array which has two or more SWITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SWITCHINGU element array into two or more groups, and for every group of two or more this classified SWITCHINGU elements For every 1st wiring group to which the 1st terminal of a SWITCHINGU element is connected in common, and this SWITCHINGU element The 2nd wiring group to which the 2nd terminal of a SWITCHINGU element is connected, and the exposure means equipped with two or more light-emitting-device array blocks which have the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, c. Simultaneous luminescence of the 1 light-emitting-device array block is carried out. two or more light-emitting-device array blocks Every block The 1st scanning signal is impressed to the 1st driving means made to operate

sequentially and the 1st wiring group of d. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the image formation equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 2nd feature and has two or more trains and the light emitting device which carried out multi-line arrangement to a. photo conductor and b. photo conductor in the 3rd, The SWITCHINGU element array which has two or more SWITCHINGU elements with which it was made to connect for every light emitting device in every line, was made to correspond for every line of this, and was arranged to the multi-line, Classify the SWITCHINGU element array for every line of this into two or more groups, and for every group of two or more this classified SWITCHINGU elements For every 1st wiring group to which the 1st terminal of a SWITCHINGU element is connected in common, and this SWITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SWITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to an exposure means to perform exposure to the aforementioned photo conductor, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the image formation equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 3rd feature and has two or more trains and the light emitting device which carried out multi-line arrangement to a. photo conductor and b. photo conductor in the 4th, The SWITCHINGU element array which has two or more SWITCHINGU elements with which it was made to connect for every light emitting device in every line, was made to correspond for every line of this, and was arranged to the multi-line, Classify the SWITCHINGU element array for every line of this into two or more groups, and for every group of two or more this classified SWITCHINGU elements The 1st wiring group in every [ to which the 1st terminal of a SWITCHINGU element is connected in common ] line, Two or more 2nd wiring groups which wired independently for every SWITCHINGU element for every line of this the line whole [ to which the 2nd terminal of a SWITCHINGU element is connected ], It has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. and by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to the 1st wiring group of at least one line of the 1st wiring groups of the exposure means and c. multi-line which perform exposure to the aforementioned photo conductor. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. at least one 2nd wiring group in two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the above -- even if few -- the 1st wiring group of one line -- the 2nd scanning signal -- impressing -- the above -- even if few -- the one 2nd wiring group -- this -- The 1st scanning signal is impressed to the 1st wiring group of the other bank of the 1st wiring groups of the 1st driving

means which operate the aforementioned simultaneous luminescence circuit, and d. multi-line so that the capacitor based on this information signal may discharge simultaneously, and they are other 2nd wiring groups of two or more 2nd wiring groups. Make it synchronize with the 1st scanning signal, and the voltage signal of another side polarity is impressed. alike -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and, on the other hand, a polar voltage signal is impressed. the above -- the 1st wiring group of an other bank -- the 2nd scanning signal -- impressing -- the 2nd wiring group besides the above -- this -- To the image formation equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 4th feature and has the light emitting device arranged on the other hand to the 5th at \*\*, [ two or more ] The SWITCHINGU element array which has two or more SWITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SWITCHINGU element array into two or more groups, and for every group of two or more this classified SWITCHINGU elements For every 1st wiring group to which the 1st terminal of a SWITCHINGU element is connected in common, and this SWITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SWITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. The 1st scanning signal is impressed to a luminescence means to perform simultaneous luminescence from this light-emitting-device array, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the luminescence equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 5th feature and has the light emitting device arranged on the other hand to the 6th at \*\*, [ two or more ] The SWITCHINGU element array which has two or more SWITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SWITCHINGU element array into two or more groups, and for every group of two or more this classified SWITCHINGU elements For every 1st wiring group to which the 1st terminal of a SWITCHINGU element is connected in common, and this SWITCHINGU element The 2nd wiring group to which the 2nd terminal of a SWITCHINGU element is connected, and the luminescence means equipped with two or more light-emitting-device array blocks which have the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, c. Simultaneous luminescence of the 1 light-emitting-device array block is carried out. two or more light-emitting-device array blocks Every block The 1st scanning signal is impressed to the 1st driving means made to operate sequentially and the 1st wiring group of d. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the luminescence equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 6th feature and has two or more trains and the light

emitting device which carried out multi-line arrangement in the 7th, Have two or more SWITCHINGU elements with which it was made to connect for every light emitting device of a multi-line, and the SWITCHINGU element of one line is made to correspond for every line. The SWITCHINGU element array and the SWITCHINGU element for every line which were arranged to the multi-line by this are classified into two or more groups. The 1st wiring group to which the 1st terminal of a SWITCHINGU element is connected in common for every group of two or more classified this SWITCHINGU elements, The 2nd wiring group to which the 2nd terminal of a SWITCHINGU element is connected for every SWITCHINGU element of this, And the luminescence means which has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, and carries out simultaneous luminescence from this light-emitting-device array, Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. and the 1st wiring group of c. above -- the 1st scanning signal -- impressing -- the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the luminescence equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously Have the light-emitting-device array which has the 7th feature and has in the octavus two or more trains and the light emitting device which carried out multi-line arrangement, and two or more SWITCHINGU elements with which it was made to connect for every light emitting device of a multi-line, and the SWITCHINGU element of one line is made to correspond for every line. by this The SWITCHINGU element array and the SWITCHINGU element for every line which were arranged to the multi-line are classified into two or more groups. The 1st wiring group for every [ to which the 1st terminal of a SWITCHINGU element is connected in common for every group of two or more classified this SWITCHINGU elements ] line, Two or more 2nd wiring groups to which the 2nd terminal of a SWITCHINGU element is connected for every SWITCHINGU element for every line of this and which wired independently for every line, And the luminescence means which has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, and carries out simultaneous luminescence from this light-emitting-device array, c. The 1st scanning signal is impressed to the 1st wiring group of at least one line of the 1st wiring groups of a multi-line. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. at least one 2nd wiring group in two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the above -- even if few -- the 1st wiring group of one line -- the 2nd scanning signal -- impressing -- the above -- even if few -- the one 2nd wiring group -- this -- The 1st driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this information signal may discharge simultaneously, And the 1st scanning signal is impressed to the 1st wiring group of the other bank of the 1st wiring groups of d. multi-line. Make it synchronize with the 1st scanning signal, and the voltage signal of another side polarity is impressed. other 2nd wiring groups of two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and, on the other hand, a polar voltage signal is impressed. the above -- the 1st wiring group of an other bank -- the 2nd scanning signal -- impressing -- the 2nd wiring group besides the above -- this -- To the luminescence equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage



signal may discharge simultaneously, it has the feature of the octavus.

[0010] In the 1st example of a mode with a desirable this invention, the aforementioned light emitting device is an element which has an organic light emitting device.

[0011] In the 2nd example of a mode with a desirable this invention, the aforementioned photo conductor is organic or an inorganic electrophotography photo conductor.

[0012] In the 4th example of a mode with a desirable this invention, the aforementioned SWITCHINGU element is TFT, and the 1st terminal of the above is a gate terminal, and the 2nd terminal of the above is a source terminal.

[0013] In the 5th example of a mode with a desirable this invention, one chip fabrication of the aforementioned SWITCHINGU element array is carried out.

[0014]

[Embodiments of the Invention] The example of this invention is explained according to a drawing. Drawing 1 is the cross section of the image formation equipment which used the luminescence equipment of this invention as an aligner, especially a color electrophotography copying machine.

[0015] Printed material, such as a form, is contained by the cassette 6 and makes printed material feed to a mechanical component towards the conveyance section in the color copying machine shown in this drawing with operation of image formation (henceforth a print) from a cassette 6. The conveyance belt 31 can carry out the both-way run of between a roller 35 and rollers 36 and 37 by carrying out the suspension of the conveyance belt 31 between the drive roller 35 and two follower rollers 36 and 37, forming the conveyance section in it, and carrying out the rotation drive of the drive roller 35 by the motor 38 here. In addition, the direction which runs is a direction shown in the arrow A in drawing in the belt 31 bottom.

[0016] The image formation units Pa, Pb, Pc, and Pd of four units are formed along the direction where the conveyance belt 31 extends. These image formation units Pa, Pb, Pc, and Pd have the respectively same composition, and explain the composition roughly hereafter taking the case of the image formation unit Pa of the 1st amorous glance.

[0017] In the image formation unit Pa, the cylinder-like photo conductor which approaches the conveyance belt 31 and rotates in the direction of arrow B, i.e., photoconductor drum 1a, is arranged. The photosensitive layer of the front face is uniformly charged with rotation of photoconductor drum 1a by primary electrification machine 4a constituted from zone-of-contact electrical machinery. Then, the light figure of the yellow component of a manuscript picture is exposed by luminescence from exposure means 8a using the aforementioned one chip light-emitting-device array which exposes the horizontal-scanning whole region of a photoconductor drum, and a yellow component static latent image is formed in this electrification photosensitive layer of it. The portion in which this latent image was formed moves by the rotation one by one, reaches the position of yellow development counter 2a, is developed by the yellow toner supplied from yellow development counter 2a in the position, and is visualized.

[0018] A yellow toner image results in an imprint part with corona-electrical-charging machine 3a prepared through the conveyance belt 31 with this drum 1a by rotation of photoconductor drum 1a. Timing is doubled with this and printed material is conveyed by the imprint part with the conveyance belt 31. Next, by impressing imprint bias to corona-electrical-charging machine 3a, the yellow toner image on photoconductor drum 1a is imprinted on printed material with rotation of photoconductor drum 1a, and goes.

[0019] Then, with rotation of photoconductor drum 1a, the toner which remains on it is removed by cleaning equipment (not shown), and will be in the state where it can go into the following image formation process. On the other hand, the printed material by which the yellow toner image was imprinted is conveyed with the conveyance belt 31 by the print section by the image formation unit Pb of the 2nd amorous glance.

[0020] The image formation unit Pb of the 2nd amorous glance is the same composition as the

image formation unit Pa of the 1st amorous glance mentioned above, and like the above by luminescence from exposure means 8b using the one chip light-emitting-device array. The light figure of the Magenta component of a manuscript picture is exposed, a Magenta component static latent image is formed, development by the Magenta toner is performed, and in the imprint section, on printed material, the obtained Magenta toner image lays on top of the yellow toner image of the 1st amorous glance, and is imprinted. Similarly, with conveyance of printed material, you form a cyanogen component static latent image and a black component static latent image, respectively, a cyano toner image and a black toner image make it imprint in piles in each process by luminescence by the exposure meanses 8c and 8d using each one chip light-emitting-device array in the image formation units Pc and Pd, and the color picture which piled up the toner image of four colors on printed material is formed.

[0021] In the image formation units Pb, Pc, and Pd of the 2nd amorous glance of the above, the 3rd amorous glance, and the 4th amorous glance Photoconductor drums 1b, 1c, and 1d, Magenta development counter 2b, cyano development counter 2c and 2d of black development counters, the corona-electrical-charging machines 3b, 3c, and 3d, and the primary electrification machines 4b, 4c, and 4d constituted from zone-of-contact electrical machinery are used like the image formation unit Pa of the 1st amorous glance, respectively.

[0022] After ending the stroke of the image formation units Pa, Pb, Pc, and Pd, after the printed material by which the toner image of four colors was imprinted is conveyed further and discharged with the separation electric discharge vessel 7, it dissociates from the conveyance belt 31 and it is sent to fixing equipment 5 equipped with the fixing roller 51 and the pressurization roller 52 of a couple. Here, usually, pressurization and heating are performed by the nip section of the rollers 51 and 52 currently heated by predetermined temperature, and fixing of an imprint toner image is performed. Then, printed material is discharged by outside the plane [ of a copying machine ].

[0023] Drawing 2 is a block diagram illustrating the detail of the image formation units Pa, Pb, Pc, and Pd illustrated to drawing 1.

[0024] The exposure meanses 8a, 8b, 8c, and 8d which the image formation units Pa, Pb, Pc, and Pd were made to correspond to photoconductor drums 1a, 1b, 1c, and 1d, respectively, and have been arranged are loaded with light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black. Such light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black It lets the wiring sections 201a, 201b, 201c, and 201d which consist of a high-density outgoing line, respectively pass. Yellow signal drive circuit (IC) connect with 202a, Magenta signal drive (circuit IC) 202b, cyano signal drive (circuit IC) 202c, and black signal drive (circuit IC) 202d, and by operation by these drive circuits Each light emitting device is controlled by either luminescence or un-emitting light. According to the picture signal from yellow signal generating circuit 204a, Magenta signal generating circuit 204b, cyano signal generating circuit 204c, and 204d of black signal generating circuits, it is set up so that luminescence operation of a light-emitting-device array can be controlled. The light emitting device used by above-mentioned light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black forms the array (array object) which the single tier was made to arrange by the high resolution of for example, 1200dpi.

[0025] Moreover, in light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black, the following switching element circuit and the sample hold circuit are formed, and the timing of each drive operation of the gate line in these circuits is controlled by gate drive circuit 203for yellow a, gate drive circuit 203for Magentas b, gate drive circuit 203for cyanogen c, and 203d of gate drive circuits for black. And control of the picture signal of control

of this gate drive operation and yellow, a Magenta, cyanogen, and a black signal is performed by the image-information-processing equipment 205 in CPU (not shown).

[0026] The one chip light-emitting-device array which has covered and arranged the whole region of the horizontal-scanning distance D in the main scanning direction to the rotation of photoconductor drums 1a, 1b, 1c, and 1d is used light-emitting-device array 200 for yellow a used by this invention, light-emitting-device array 200 for Magentas b, light-emitting-device array 200 for cyanogen c, and light-emitting-device array 200d for black. These light-emitting-device arrays 200a, 200b, 200c, and 200d are accumulated on the one chip in which two or more light emitting devices arranged 600 dpi by the above 1200dpi resolution which is high resolution, or the high resolution beyond it cover the whole region of the horizontal-scanning distance D of a photo conductor.

[0027] By the desirable example of this invention, the above-mentioned one chip light-emitting-device array used by above-mentioned light-emitting-device array 200 for yellow a, light-emitting-device array 200 for Magentas b, light-emitting-device array 200 for cyanogen c, and light-emitting-device array 200d for black is created from the single substrate which lower-\*\*, and uses for four what carried out cutting separation and was obtained, respectively.

[0028] The arrow C in drawing shows the direction of vertical scanning of the photo conductor which rotates. moreover, photoconductor drums 1a, 1b, 1c, and 1d The aluminium pipe of the same diameter (for example, the diameter of 60cm, 30cm, 20cm) was used, the photosensitive layer (for example, an organic photoelectrical body whorl with four [ same ] or the same a-Si photosensitive layer) of the same kind was used, therefore the traverse speed of the direction C of vertical scanning was set up identically respectively.

[0029] Drawing 3 is the perspective diagram of the one chip light-emitting-device array substrate 300 in the process before carrying out cutting separation along with the cutting part lose contact 302 four, respectively from the glass substrate 303 used as the single substrate which formed the one chip light-emitting-device array 301 used by the above-mentioned light-emitting-device array 200 for yellow a, light-emitting-device array 200 for Magentas b, light-emitting-device array 200 for cyanogen c, and light-emitting-device array 200d for black prepared on the glass substrate 303.

[0030] If it is the size which can form a light-emitting-device array by the one chip, there will be especially no limit in the size of the glass substrate 303 used by this invention.

[0031] Drawing 4 illustrates the equal circuit for every one chip light-emitting-device array 301 illustrated to drawing 3. light emitting devices OEL1, OEL2, OEL3, and OEL4 -- when ... is carried in an electrophotography copying machine, along with the main scanning direction to the move hand of cut of a photoconductor drum, more than one are arranged and it connects with a single tier in an active-matrix circuit this active-matrix circuit -- switching elements SW1, SW2, SW3, and SW4 -- as ... using TFT -- suitable -- \*\*\*\* -- the odd-numbered light emitting devices OEL1 and OEL3 and ... the light-emitting-device group (the 1st group) classified as OEL (2N-1) It connects with each gate terminal of SW (2N-1) in common through the gate line G1. the odd-numbered switching elements SW1 and SW3 and ... the even-numbered light emitting devices OEL2 and OEL4 and ... the light-emitting-device group (the 2nd group) classified as LEL (2Ns) -- the even-numbered switching elements SW2 and SW4 and ... it connects with each gate terminal of SW (2Ns) in common through the gate line G2 the above "N" -- 1, 2, 3, 4, and 5 -- it is the integer of ... and light-emitting-device OEL1-OEL2 which adjoins each other in this active-matrix circuit, OEL3-OEL4, and ... switching element SW1-SW2 which adjoins each other in every OEL(2N-1)-OEL (2Ns), SW3-SW4, and ... the source terminal of every SW(2N-1)-SW (2Ns) -- each source lines I1 and I2 -- it connects in common through ... Moreover, light emitting devices OEL1, OEL2, OEL3, and OEL4 ... It connects with the common line C0 in common, and a counter electrode is each light emitting device OEL1, OEL2, OEL3, and OEL4... It can consider as an anode or a cathode.

[0032] the desirable example of this invention -- switching elements SW1, SW2, SW3, and SW4

... and light emitting devices OEL1, OEL2, OEL3, and OEL4 -- sample hold circuits SH1, SH2, SH3, and SH4 and ... are connected between ... These sample hold circuits SH1, SH2, SH3, and SH4 and ... respectively -- the capacitors C1, C2, C3, and C4 for charge storages ... having --  
 \*\*\*\* -- the capacitors C1, C2, C3, and C4 for these charge storages ... Connect with the switching element for sample hold which connected the gate to the common path cord S0, respectively, and it is made to synchronize with the rotation of a photoconductor drum, and it is set up so that the gate of the switching element for sample hold may turn on or turn off in predetermined interval time. Under the present circumstances, capacitors C1, C2, C3, and C4 for charge storages ... A counter electrode is set as a ground or predetermined DC bias VG. Moreover, according to an outside temperature, a time (lifetime), etc., it can carry out adjustable [ of the amount of bias of this predetermined DC bias VG ].

[0033] Drawing 5 is illustrating the drive of the active-matrix circuit illustrated to drawing 4 . In the first half of 1 horizontal-scanning period corresponding to one scanning interval by the laser to a photoconductor drum, it is made to synchronize with the gate-on pulse to the gate lines G1 and G2, and the pulse of the peak value which answered the picture signal which is a polar voltage signal (polarity is based on the applied voltage to a path cord C0) on the other hand is impressed to the source lines I1 and I2. This one side polarity voltage signal is made to respond to the gradation information on image information, and each peak value is set up. Moreover, in another desirable example, it can be made to be able to respond to the gradation information on image information, and pulse width or a pulse number can be changed. a path cord S0 -- the capacitors C1, C2, C3, and C4 for charge storages -- the charge by which accumulation maintenance was carried out as image information at ... light emitting devices OEL1, OEL2, OEL3, and OEL4 -- in order to carry out order electric discharge to ... and to make light emit, the gate-on pulse for setting the gate of the switching element for sample hold as ON is impressed the impression stage of this gate-on pulse -- the capacitors C1, C2, C3, and C4 for charge storages -- it is set up so that it may be made to operate, after a charge is fully charged by ...

[0034] As for the pulse of a polar voltage signal, on the other hand in the second half of 1 continuing horizontal-scanning period, it is desirable for the voltage signal of reversed polarity to be impressed and to set a voltage average with a voltage signal as zero in the first half a voltage signal and the second half in this case, and to set [ which was synchronized with the gate-on pulse to the gate lines G1 and G2, and was used for source line I1I2 in the period of the first half ] up so that DC component may be lessened as much as possible. the operation same to a path cord S0 as the time of the first half -- the capacitors C1, C2, C3, and C4 for charge storages -- the charge by which accumulation maintenance was carried out at ... light emitting devices OEL1, OEL2, OEL3, and OEL4 -- it reverse-discharges to ... The state where light is not emitted is formed by this reverse electric discharge.

[0035] Drawing 6 illustrates one of the desirable examples of the light-emitting-device array of this invention. this light-emitting-device array -- the [ the 1st light-emitting-device array block, the 2nd light-emitting-device array block, and ] -- it is classified into three blocks which consist of 3 light-emitting-device array blocks, and the circuit which illustrates every block to drawing 4 is incorporated under the present circumstances, in the example of drawing 6 , it is set as the wiring for a time-sharing drive with three time sharing -- having -- every block -- the [ the 1st gate line block (G11, G12, G13), the 2nd gate line block (G21, G22, G23), and ] -- 3 gate line block (G31, G32, G33) is wired The source line corresponding to an information signal line may be wired in common for every light-emitting-device array block, and can decrease the number of wiring by this. Moreover, for every light-emitting-device array block, an information line can also be wired independently and the time of 1 horizontal-scanning period can be sharply shortened by this.

[0036] the [ the 1st light-emitting-device array block the 2nd light-emitting-device array block, and ] -- in the first half, 3 light-emitting-device array block has a scan in the first half a scan

and the second half, respectively, and it produces order electric discharge by scan, and in the second half, it impresses a gate-on pulse to path cords S1, S2, and S3 so that reverse electric discharge may be produced by scan. Moreover, in the first half, reverse electric discharge may be produced by scan and order electric discharge may be produced by scan in the second half. [0037] Drawing 7 is illustrating the example of a drive of the light-emitting-device array of drawing 6. The charge to the capacitor for charge storages is started by the impression start of the gate-on pulse to the 1st gate line block (G11, G12, G13), and the electric discharge to each light emitting device from each capacitor for charge storages is started by the impression start of the gate-on pulse to a path cord S1. By this, luminescence from a light emitting device can be operated simultaneously the whole block. Then, the charge to the capacitor for charge storages is started by the impression start of the gate-on pulse to the 1st gate line block (G11, G12, G13), and the reverse electric discharge to each light emitting device from each capacitor for charge storages is started by the impression start of the gate-on pulse to path cords S1, S2, and S3.

[0038] Reach the 2nd gate line block (G21, G22, G23), it is made to operate one by one like the above also about the 3rd gate line block (G31, G32, G33), and 1 horizontal scanning is performed.

[0039] Drawing 8 shows the cross section about 1 bit of the element structure used in the circuit illustrated to drawing 4. Among drawing, 801 are a substrate and insulators, such as glass and plastics, are used. On the substrate, the switching element section SW1, the sample hold circuit section SH1, and the light-emitting-device section OEL1 are formed. The switching element section SW1 has the 1st transistor structured division constituted by the gate electrode 802, the gate insulator layer 803, the thin-film-semiconductor layer 804, the source electrode 805, and the drain electrode 806. The sample hold circuit section SH1 has the 2nd transistor structured division constituted by the capacitor section for charge storages constituted by the insulator layer 809 prepared in inter-electrode [ of the electrode 807-808 of a couple, and this couple ] and the gate electrode 810, the gate insulator layer 811, the thin-film-semiconductor layer 812, the source electrode 813, and the drain electrode 814. The light-emitting-device section OEL1 is the light-emitting-device section constituted by the luminous layer 817 prepared in inter-electrode [ of the electrode 815-816 of a couple, and this couple ].

[0040] the [ the 1st used by this invention, and ] -- as thin-film-semiconductor layers 804 and 812 of 2 transistor sections, a thin film amorphous silicon, thin film polycrystal silicon, or single-crystal-thin-film silicon can be used, and a thin film silicon nitride and thin film tantalum oxide can be used as gate insulator layers 803 and 811. Moreover, as for the electrode of a couple used in the light-emitting-device section OEL1, it is desirable to use one of these as an anode, to use another side as a cathode, and to use reflection nature metal membranes, such as aluminum, silver, zinc, gold, and chromium, as an electrode of another side, using transparent electric conduction films, such as ITO (an indium and stannic-acid ghost) and a tin oxide, as an electrode corresponding to the luminescence direction of radiation.

[0041] Moreover, in order to prevent degradation of a luminous layer in this invention, a wrap's is desirable by the sealing agent in this luminous layer. As this sealing agent, organic insulation resins, such as inorganic insulating material, such as a silicon oxide and a silicon nitride, and epoxy, can be used.

[0042] Next, although the luminous layer 817 suitably used by this invention is organic electroluminescence (OEL), inorganic [ EL ] can also be used for it by this invention.

[0043] The example of OEL which can be used by this invention is indicated below.

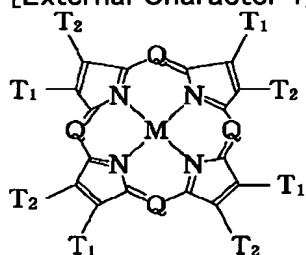
[0044] As a material in OEL used by this invention EPA349,265 of Scozzafava ; (1990) U.S. patent No. 4,356,429; [ of Tang ] U.S. patent No. 4,539,507; [ , such as VanSlyke, ] U.S. patent the 4,720,432; , such as VanSlyke U.S. patent No. 4,769,292; [ , such as Tang, ] U.S. patent No. 4,885,211; [ , such as Tang, ] U.S. patent the 4,950,950; , such as Perry U.S. patent No. 5,059,861;

[, such as Littman, ] U.S. patent No. 5,047,687; [ of VanSlyke ] U.S. patent No. 5,073,446; [, such as Scozzafava, ] U.S. patent No. 5,059,862; [, such as VanSlyke, ] The thing of an indication can be used [ U.S. patent / of VanSlyke etc. / No. 5,061,617 /; U.S. patent / of VanSlyke / No. 5,151,629 /; U.S. patent / of Tang etc. / No. 5,294,869 /; U.S. patent / of Tang etc. / No. 5,294,870 ]. EL layer consists of organic hole pouring in contact with an anode plate and a move band, and the electron injection and move band that form organic hole pouring, and a move band and junction. Hole pouring and a move band may be formed from a single material or two or more single material, and consist of a hole pouring layer in contact with the continuous hole moving bed infixed between an anode plate and a hole pouring layer, an electron injection, and a move band. Similarly, an electron injection and a move band may be formed from single material or two or more material, and consist of an electron-injection layer in contact with the continuous electronic-transition layer infixed between an anode plate and an electron-injection layer, hole pouring, and a move band. A hole, electronic reunion, and luminescence are generated within the electron injection which adjoins junction of an electron injection, a move band and hole pouring, and a move band, and a move band. Although it deposits by vacuum evaporation typically, it deposits with other conventional technology again, and deals in the compound which forms an OEL layer.

[0045] The organic material which consists of a hole pouring layer in the desirable example is :

[0046] which has the following general formulas.

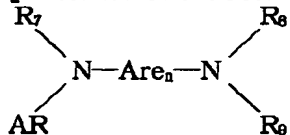
[External Character 1]



A metal, a metallic oxide, or the metal halogenides T1 and T2 fill both the unsaturation six membered rings in which N or C-RM expresses hydrogen, or :Q contains a displacer like an alkyl or a halogen here. While a desirable alkyl portion contains the carbon atom of about 1 to 6, it constitutes an allyl-compound portion with a desirable phenyl.

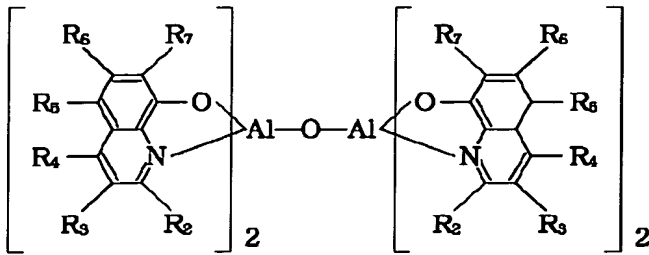
[0047] In the desirable example, the hole moving bed is an aromatic tertiary amine. The desirable subclass of an aromatic tertiary amine is : [0048] containing the tetrapod allyl-compound diamine which has the following formulas.

[External Character 2]



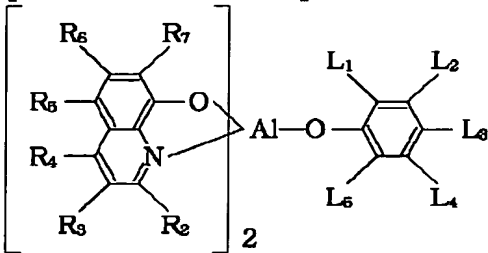
Are is a propine group here, n is the integer of 1 to 4, and it is Ar, R7, R8, and R9. It is the allyl-compound group chosen, respectively. In the desirable example, luminescence, an electron injection, and a move band contain a metal oxy-NOIDO (oxinoid) compound. The desirable example of a metal oxy-NOIDO compound is : [0049] which has the following general formulas.

[External Character 3]



It is R2-R7 here. Replacement possibility is expressed. At other desirable examples, a metal oxy-NOIDO compound is : [0050] which has the following formulas.

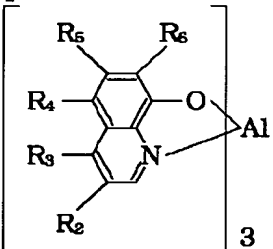
[External Character 4]



here -- R2-R7 a definition is given above -- having -- L1-L5 -- intensive -- 12 or a fewer carbon atom -- containing -- respectively -- separate -- the hydrogen or the carbohydrate group of a carbon atom of 1 to 12 -- expressing -- L1 and L2 -- both -- or both L2 and L3 can form the united benzo ring In other desirable examples, metal oxy-NOIDO compounds are the following formulas.

[0051]

[External Character 5]



It is R2-R6 here. Hydrogen or other replacement possibility are expressed. It is only that the above-mentioned example expresses the existing desirable organic material which is only used within an electroluminescence layer. It does not mean that they restrict the visual field of this invention, and, generally this directs an organic electroluminescence layer. Organic EL material contains the coordination compound which has an organic ligand so that the above-mentioned example may show.

[0052] As a segment electrode 403 used by the light emitting device of this invention, reflection nature metals, such as aluminum, silver, zinc, gold, and chromium, can be used, and transparent electric conduction films, such as indium teens OKISAIZU and a tin oxide, can be used as a counterelectrode 402.

[0053] As a sealing agent 405 used by this invention, it is closed with organic insulation resins, such as inorganic insulating material, such as a silicon oxide and a silicon nitride, and epoxy. Moreover, as a protective layer 404 used by this invention, the coat material by organic insulation resins, such as inorganic insulating material, such as a silicon oxide and a silicon nitride, and epoxy, can be used.

[0054] With the image formation equipment of this invention, inorganic photo conductive materials, such as organic photo conductive materials, such as BENZO oxazole system photo

conductor matter, BENZO thiazole system photo conductor matter, and triphenylamine system photo conductor matter, or amorphous silicon (a-Si) photo conductor matter, amorphous silicon germanium alloy (a-SiGe) photo conductor matter, and amorphous silicon carbon alloy (a-SiC) photo conductor matter, can be used as a photo conductors [ 1a, 1b, 1c and 1d ] photosensitive layer.

[0055] Thus, on the created element, 150nm of silicon nitrides was formed in the spatter, and the protective layer was formed for closure. In addition, protective-layer formation performed membrane formation within the same vacuum system from organic layer membrane formation.

[0056] What has a big work function as an anode material organic [ Light Emitting Diode ] is desirable, and can use a tin oxide, gold, platinum, palladium, a selenium, iridium, copper iodide, etc. other than ITO used by this example.

[0057] On the other hand, what has a work function small as a cathode material is desirable, and can use Mg, aluminum, Li, In(s), or these alloys other than Mg/Ag used by this example.

[0058] About an electron hole transporting bed, the hole transportability compound expressed to the following table other than TPD can be used.

[0059] Moreover, you may use not only an organic material but inorganic material. a-Si, a-SiC, etc. are raised as inorganic material used.

[0060] As an electronic transporting bed, it is Alq3. The electronic transportability compound otherwise expressed to the following table can be used.

[0061] Moreover, dopant coloring matter as shown in the following table 10 can also be doped to an electronic transporting bed or an electron hole transporting bed.

[0062] As for a material organic [ Light Emitting Diode ], it is desirable to choose what considers spectrum luminescence with sensitivity as the photoconductor drum to be used.

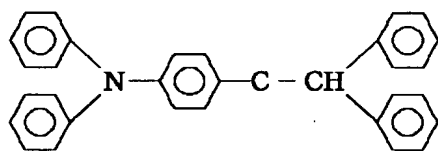
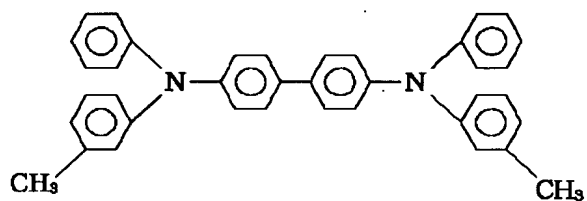
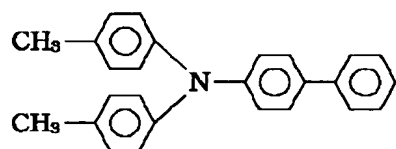
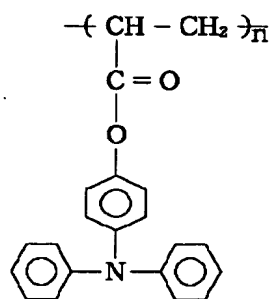
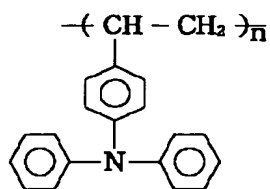
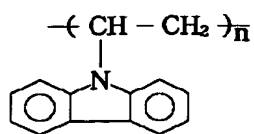
[0063]

[External Character 6]



ホール輸送性化合物

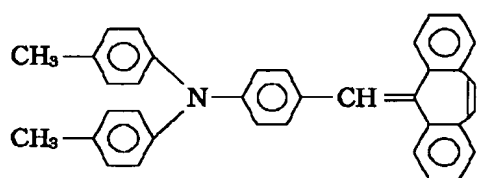
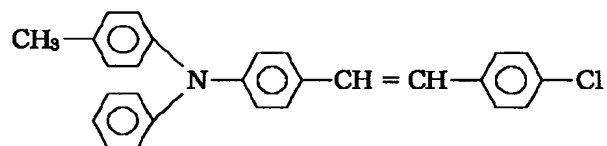
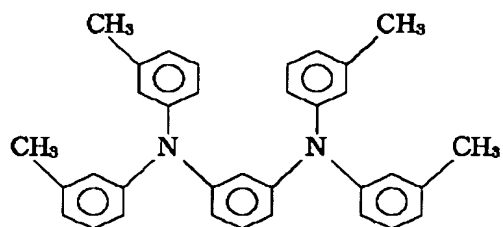
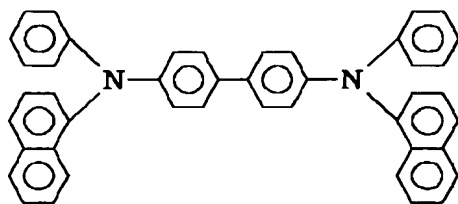
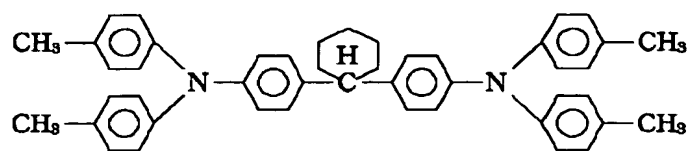
ホール輸送体



[0064]

[External Character 7]

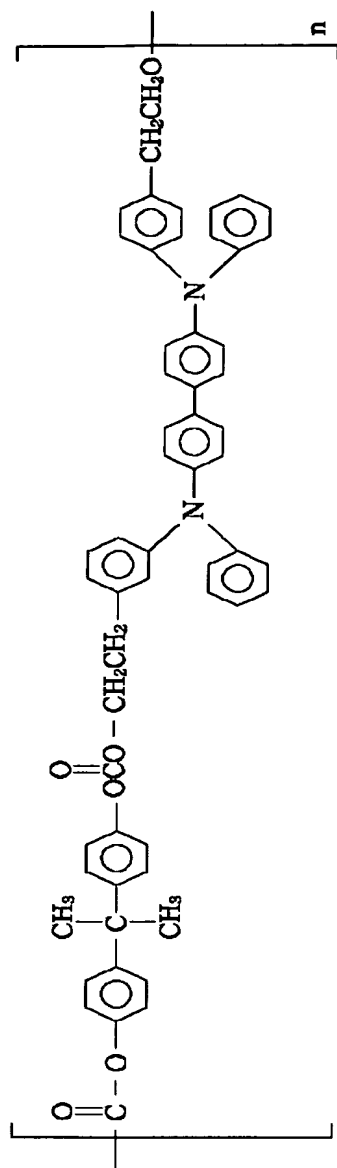
ホール輸送性化合物



[0065]

[External Character 8]

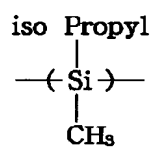
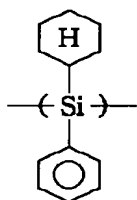
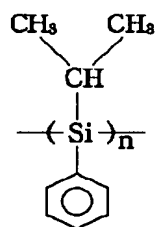
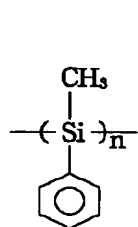
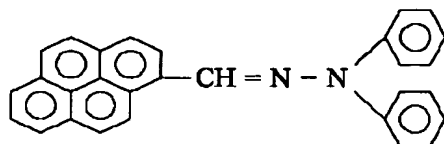
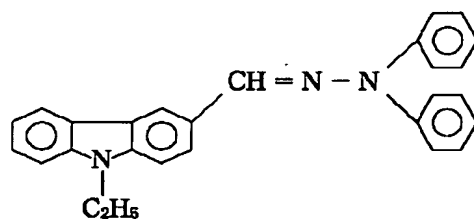
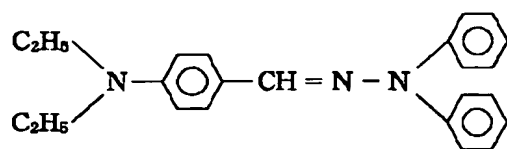
ホール輸送性化合物



[0066]

[External Character 9]

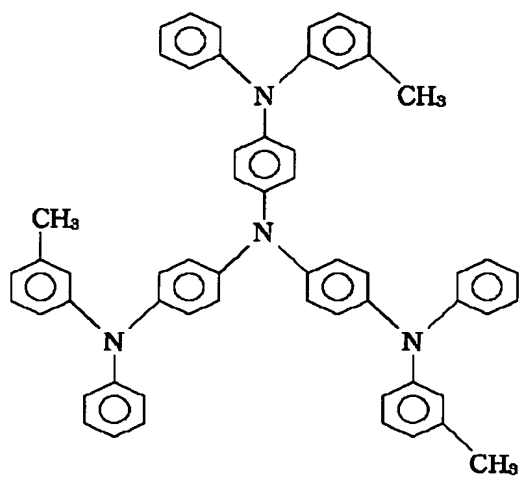
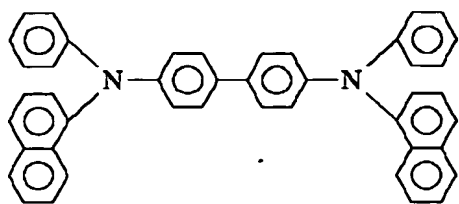
ホール輸送性化合物



[0067]

[External Character 10]

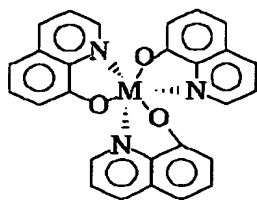
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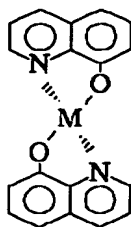
[0068]

[External Character 11]

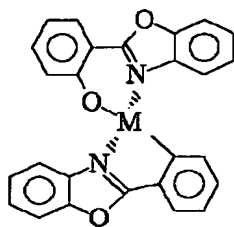
電子輸送性化合物



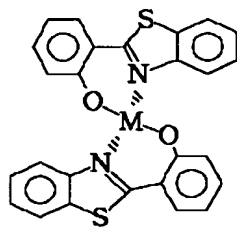
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M : Zn, Mg, Be



M : Zn, Mg, Be

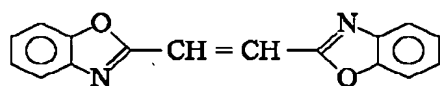
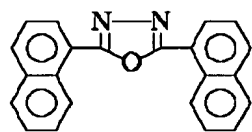
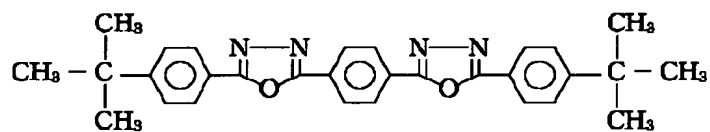
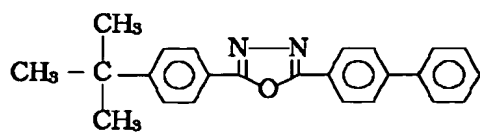


M : Zn, Mg, Be

[0069]

[External Character 12]

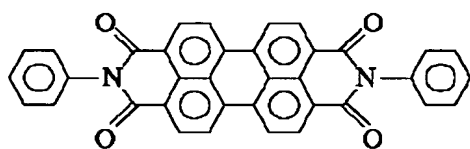
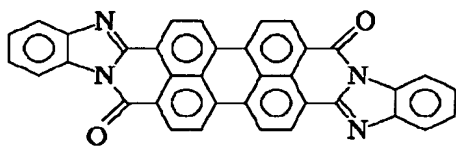
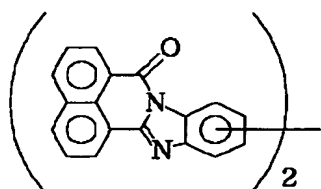
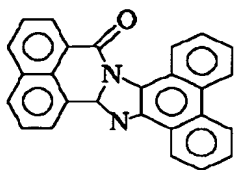
電子輸送性化合物



[0070]

[External Character 13]

電子輸送性化合物

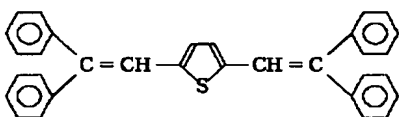
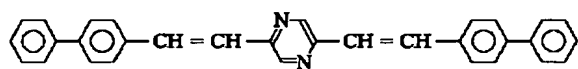
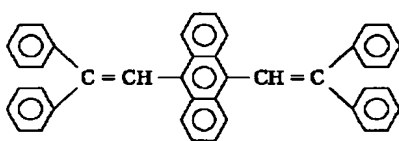
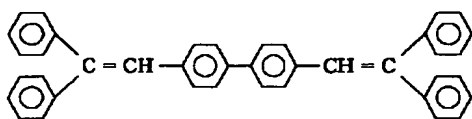
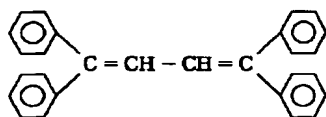
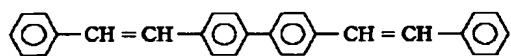


[0071]

[External Character 14]



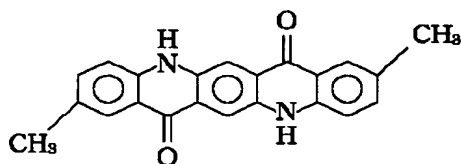
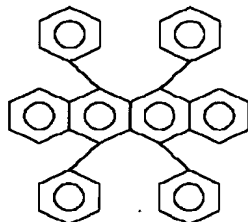
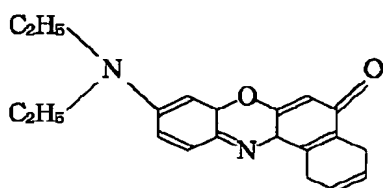
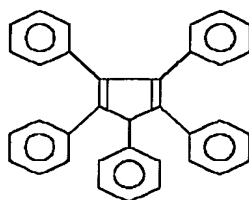
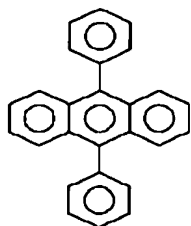
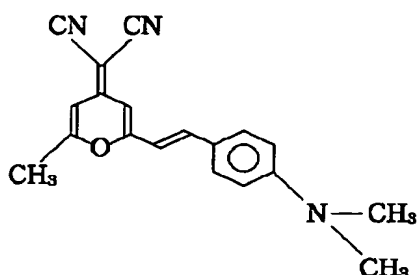
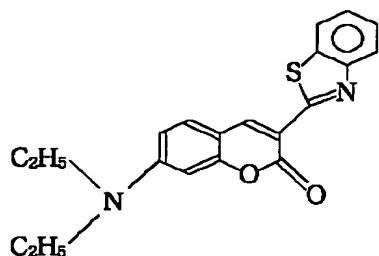
電子輸送性化合物



[0072]

[External Character 15]

## ドーパント色素



&lt;BR&gt;

[0073] Drawing 9 is the light emitting device of another desirable mode of this invention. The luminous layer 817 which the same thing as the switching element section SW1 and the sample hold circuit section SH1 which were used by drawing 8 was prepared on the downward substrate 801, and was prepared in inter-electrode [ of the electrodes 816 and 815b of the couple for forming a 1-bit light-emitting part on the upper substrate 901 (insulating substrates, such as glass) and this couple ] is arranged. The substrates 801 and 901 of these couples carry out opposite arrangement towards the inside, and electrode 815a on a substrate 801 and electrode 815b on a substrate 901 are electrically connected by the electroconductive glue (adhesive electrical connection object) 902.

[0074] The adhesive electrical connection object 902 is acquired by making the predetermined position of the upper substrate 901, the lower substrate 801, or its both apply and dry this by adoption of screen printing, offset printing, or the dispenser applying method using the electroconductive glue by which distributed content of a conductive particle like a carbon particle, and a silver-granule child and a copper particle was carried out into an epoxy system or phenol system heat-curing adhesives.

[0075] In order to reinforce interface adhesive strength, silane coupling agents, such as N-(2-aminoethyl)-3-aminopropyl trimethoxysilane, N-(2-aminoethyl)-3-aminopropyl trimethoxysilane, 3-aminopropyl trimethoxysilane, 3-aminopropyl methyldiethoxysilane, and 3-glycidoxypopyltrimetoxysilane, can be made to contain in an above-mentioned electroconductive glue.

[0076] A pewter etc. is mentioned as other examples of the adhesive electrical connection object 902.

[0077] The adhesive electric insulation object 903 is formed in the periphery section of the above-mentioned adhesive electrical connection object 902. The adhesive electric insulation object 903 is acquired by making the predetermined position of the upper substrate 901, the lower substrate 801, or its both apply and dry an epoxy system or phenol system insulation adhesives by methods, such as offset printing, screen printing, or the dispenser applying method. Under the present circumstances, it is suitable to use the manufacture method of preparing an electroconductive glue to the substrate of the direction in which insulating adhesives are formed to one substrate of the upper substrate 901 or a substrate 801, and these insulating adhesives are not formed, in the application of insulating adhesives and an electroconductive glue.

[0078] Moreover, in this invention, it can replace with the above-mentioned adhesive electric insulation object 903, and liquid insulators, such as liquid crystal like an insulator without adhesive strength, for example, an organic solvent, a high-boiling point organic solvent, a nematic liquid crystal, cholesteric liquid crystal, and a smectic liquid crystal, can also be used.

[0079] Moreover, the above-mentioned adhesive electric insulation object 903 or a non-adhesive property electric insulation object can also be made to contain coloring objects, such as a color pigment and a paint, so that it may have shading hardening.

[0080] Drawing 10 is another desirable example of this invention. The luminescence equipment illustrated to drawing 10 is equipped with the parallel one chip light-emitting-device array 100 of two lines which prepared the parallel one chip light-emitting-device array located in head line 100A and consecutiveness line 100B to the move direction of photo conductors, such as a photoconductor drum. It is good that it is made to perform the writing of one line by operation of this parallel one chip light-emitting-device array 100 of two lines.

[0081] Drawing 11 is the equal circuit of the parallel one chip light-emitting-device array 100 of two lines illustrated to drawing 10. The thing of the same equal circuit as the element illustrated to above-mentioned drawing 3, respectively can be used for the one chip light-emitting-device array of head line 100A and consecutiveness line 100B.

[0082] the light emitting devices OEL11, OEL12, OEL13, and OEL14 of head line 100A and head line 100A with which the one chip light-emitting-device array of consecutiveness line 100B is equipped -- the light emitting devices OEL21, OEL22, OEL23, and OEL24 of ... and consecutiveness line 100B -- when ... is carried in an electrophotography copying machine, along with the main scanning direction to the move hand of cut of a photoconductor drum, more than one are arranged, respectively and it connects with 2 parallel in an active-matrix circuit this active-matrix circuit -- switching elements SW11, SW12, SW13, and SW14 -- as ... using TFT -- suitable -- \*\*\*\* -- the odd-numbered light emitting devices OEL11 and OEL13 and ... the light-emitting-device group (the 1st group) classified as OEL1 (2N-1) It connects with each gate terminal of SW1 (2N-1) in common through the gate line G(100A) 1. the odd-numbered switching elements SW11 and SW13 and ... the even-numbered light emitting devices OEL12 and OEL14 and ... the light-emitting-device group (the 2nd group) classified as OEL1 (2Ns) -- the even-numbered switching elements SW12 and SW14 and ... it connects with each gate terminal of SW1 (2Ns) in common through the gate line G(100A) 2 And it sets in this active-matrix circuit. adjacent light-emitting-device OEL11-OEL12, OEL13-OEL14, and ... switching element SW11-SW12 which adjoins each other in every OEL1(2N-1)-OEL1 (2Ns), SW13-SW14, and ... for the source terminal of every SW1(2N-1)-SW1 (2Ns) each source lines I (100A)1 and I (100A)2

-- it connects in common through ... Moreover, light emitting devices OEL11, OEL12, OEL13, and OEL14 ... It connects with the common line C0 in common, and a counter electrode is each light emitting device OEL11, OEL12, OEL13, and OEL14... It can consider as an anode or a cathode. furthermore, the switching elements SW11, SW12, SW13, and SW14 ... light emitting devices OEL11, OEL12, OEL13, and OEL14 -- the same sample hold circuit as the element of drawing 3 is connected between ... This sample hold circuit is equipped with the capacitor for charge storages, respectively, the capacitor for charge storages of an odd number train connects the gate to the common path cord S(100A) 1, and the gate is connected to the common path cord S(100A) 2, and the capacitor for charge storages of an even number train is synchronized with the rotation of a photoconductor drum, and it is set up so that the gate of the switching element for sample hold may turn on or turn off in predetermined interval time. [0083] the light emitting devices OEL21, OEL22, OEL23, and OEL24 of head line 100A and consecutiveness line 100B of parallel arrangement -- similarly in the active-matrix circuit linked to ... the odd-numbered light emitting devices OEL21 and OEL23 and ... the light-emitting-device group (the 1st group) classified as OEL2 (2N-1) It connects with each gate terminal of SW2 (2N-1) in common through the gate line G(100B) 1. the odd-numbered switching elements SW21 and SW23 and ... the even-numbered light emitting devices OEL22 and OEL24 and ... the light-emitting-device group (the 2nd group) classified as OEL2 (2Ns) -- the even-numbered switching elements SW22 and SW24 and ... it connects with each gate terminal of SW2 (2Ns) in common through the gate line G(100B) 2 And it sets in this active-matrix circuit. adjacent light-emitting-device OEL21-OEL22, OEL23-OEL24, and ... switching element SW21-SW22 which adjoins each other in every OEL2(2N-1)-OEL2 (2Ns), SW23-SW24, and ... for the source terminal of every SW2(2N-1)-SW2 (2Ns) each source lines I (100B)1 and I (100B)2 -- it connects in common through ... Moreover, light emitting devices OEL21, OEL22, OEL23, and OEL24 ... It connects with the common line C0 in common, and a counter electrode is each light emitting device OEL21, OEL22, OEL23, and OEL24... It can consider as an anode or a cathode. furthermore -- the same -- switching elements SW21, SW22, SW23, and SW24 ... and light emitting devices OEL21, OEL22, OEL23, and OEL24 -- to ... It \*\*\*\*\* a sample hold circuit and has the capacitor for charge storages, respectively. the capacitor for charge storages of an odd number train The gate is connected to the common path cord S(100B) 1, respectively, and, as for the capacitor for charge storages of an even number train, the gate is connected to the common path cord S(100B) 2, respectively.

[0084] As for the light emitting device arranged to head line 100A with the luminescence equipment described above, and the contiguity light emitting device arranged to consecutiveness line 100B, it is desirable to arrange in parallel to parallel of vertical scanning, i.e., the direction of a photoconductor drum, to the move direction of a photo conductor.

[0085] Drawing 12 is a drive sequence diagram in drive operation of the element illustrated to drawing 10 and 11. the source line I (100A) which becomes the relation of a contiguity light emitting device during the drive of the light-emitting-device array of head line 100A in the drive sequence illustrated to drawing 12 -- the 1, 2, ..., source line I (100B) -- as for the applied voltage impressed to 1, 2, and ..., it is good to set up so that it may consider as reversed polarity on the basis of C0 and the voltage average may become zero especially mutually [0086]

[Effect of the Invention] According to this invention, on having canceled the "technical problem which should solve invention" of a protomerite, and a concrete target By having changed into the conventional connector type Light Emitting Diode, and having used the new one chip light-emitting-device array by this invention The cost in the light-emitting-device array section of image formation equipment can be reduced, and the color repeatability in main scanning direction can be raised. Furthermore, since four single chip light-emitting-device arrays arranged for every photo conductor are taken from a single substrate and the luminescence property of each single chip light-emitting-device array is almost equal Since the property

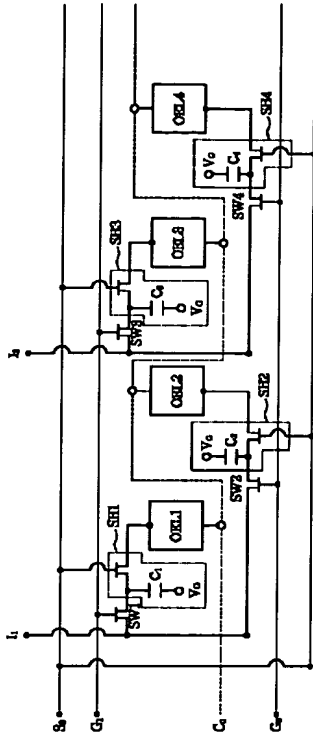
compensation between each element array was omissible, the cost in at this rate was reduced sharply.

[0087] Furthermore, according to this invention, the luminescence brightness of a light emitting device was reinforced sharply, the process speed of an electrophotography copying machine was sharply raised by this, simultaneously, the number of driver ICs and the number of wiring in a printer head could be reduced sharply, and this has realized the color electrophotography copying machine of a low cost.

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[Translation done.]

Drawing selection [Representative drawing] 



[Translation done.]

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[JP,11-198433,A]

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CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE  
INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

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[Translation done.]



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**TECHNICAL FIELD**

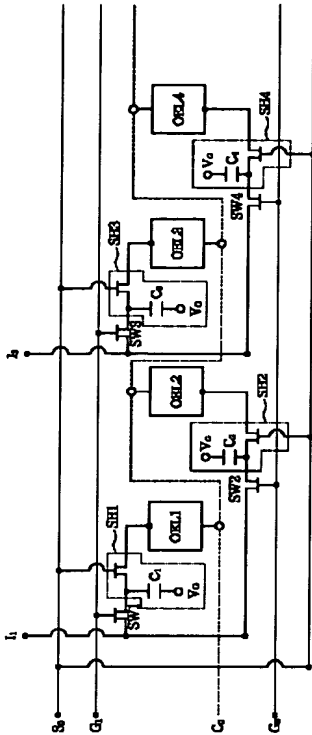
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[The technical field to which invention belongs] this invention relates to the image formation equipment which is made to correspond for every photo conductor, forms cyanogen, a Magenta, yellow, and a black picture, and forms a color picture by compounding these pictures by arranging two or more photo conductors to a single tier, and using each photo conductor independently especially, about the luminescence equipment used for the image formation equipment and this like an electrophotography copying machine.

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[Translation done.]

Drawing selection [Representative drawing] ☐



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**PRIOR ART**

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[Description of the Prior Art] Prepare the laser beam light source, respectively, the oscillation of the four laser beam light sources each is made to control as an image exposure means based on cyanogen, a Magenta, yellow, and each black image information for every four electrophotography photo conductors made the single tier arrange, and it is this. The laser beam light source image formation equipment which forms a color picture is known by making cyanogen, a Magenta, yellow, and an electrostatic black latent image form for every four electrophotography photo conductors, and making these electrostatic latent images develop, and making the development picture of these plurality compound.

[0003] Moreover, it changes into the laser beam light source used with the aforementioned image formation equipment, and the Light Emitting Diode light source image formation equipment which has arranged the four Light Emitting Diode light sources for every photo conductor as the light source in which cyanogen, a Magenta, yellow, and an electrostatic black latent image are made to form is also known.

[0004] It is difficult for the present condition it to make in agreement correctly both the main scanning direction of each laser beam and the direction of vertical scanning every four laser beam light sources arranged for every four photo conductors, since the aforementioned laser beam light source image formation equipment makes in agreement cyanogen, a Magenta, yellow, and each black picture and makes them compound.

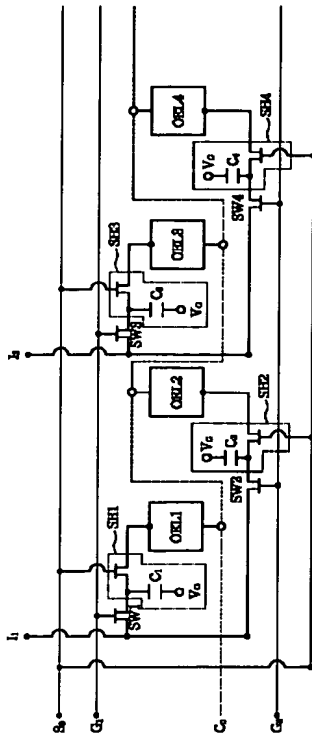
[0005] On the other hand, with the aforementioned Light Emitting Diode light source image formation equipment, although it could be made to realize comparatively simply, since the demand which makes in agreement both above-mentioned main scanning direction and directions of vertical scanning needed to use two or more Light Emitting Diode chips as the connector type Light Emitting Diode element which it comes to tie to a single tier in addition to Light Emitting Diode being expensive, it became still more expensive. Furthermore, since, as for a Light Emitting Diode chip, the luminescence property was different for every chip, it was made to expose by the same connector type Light Emitting Diode element as the above, and the exposure condition was different for every luminescence property of a chip in main scanning direction, consequently the horizontal-scanning exposure whole region to movement of a photo conductor worsened picture repeatability of main scanning direction.

[0006] Moreover, in the electrophotography copying machine which can form a color picture, the luminescence property between two or more of said connector type Light Emitting Diode elements arranged for two or more photo conductors of every even in this case although it needed to tie and the mold Light Emitting Diode element needs to be arranged for two or more photo conductors of every was different, and the difficult demand which has been arranged for every photo conductor and which ties and adjusts the luminescence property between mold Light Emitting Diode elements had newly occurred.

[0007]

[Translation done.]

Drawing selection [Repr sentative drawing] 



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**EFFECT OF THE INVENTION**

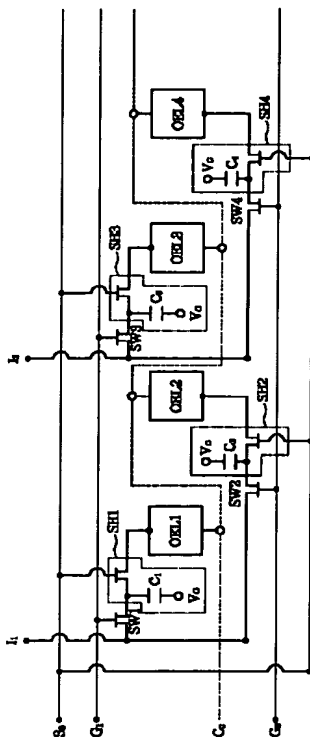
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[Effect of the Invention] According to this invention, it is the foregoing paragraph.

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[Translation done.]

Drawing selection [Representative drawing] 



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**TECHNICAL PROBLEM**

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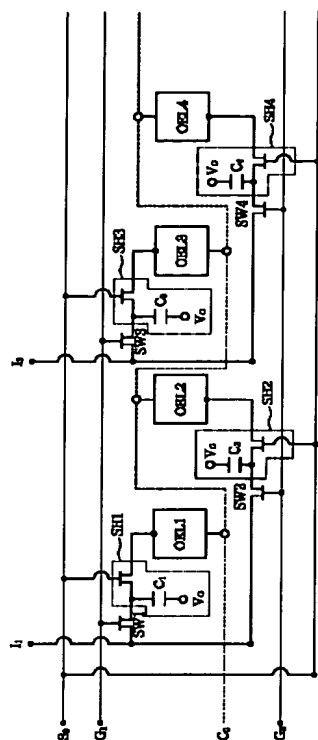
[Problem(s) to be Solved by the Invention] The image formation equipment with which Object of the Invention used the connector type Light Emitting Diode element for the aligner, The variation of the luminescence property in main scanning direction which had become a problem especially in the electrophotography copying machine is canceled. The number of drive wiring and the number of drive circuit chips of a printer head are reduced sharply, luminescence brightness is raised to sufficient size with this, and it is in the point which brings forward the process speed of an electrophotography copying machine sharply by this.

[0008] Furthermore, Object of the Invention increases the luminescence time of a light emitting device sharply, and is in longer \*\*\*\* sharply about the life of a printer head.

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[Translation done.]

Drawing selection [Repr sentative drawing] 



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**MEANS**

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[Means for Solving the Problem] The light-emitting-device array which has the light emitting device which has arranged two or more this inventions the 1st to the main scanning direction to the move direction of a. photo conductor and b. photo conductor, The SWITCHINGU element array which has two or more SWITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SWITCHINGU element array into two or more groups, and for every group of two or more this classified SWITCHINGU elements For every 1st wiring group to which the 1st terminal of a SWITCHINGU element is connected in common, and this SWITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SWITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to an exposure means to perform exposure to the aforementioned photo conductor, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- The driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously, To the image formation equipment which \*\*\*\*, it has the 1st feature. to the 2nd a. photo conductor, b. The light-emitting-device array which has the light emitting device arranged to the main scanning direction to the move direction of a photo conductor, [ two or more ] The SWITCHINGU element array which has two or more SWITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SWITCHINGU element array into two or more groups, and for every group of two or more this classified SWITCHINGU elements For every 1st wiring group to which the 1st terminal of a SWITCHINGU element is connected in common, and this SWITCHINGU element The 2nd wiring group to which the 2nd terminal of a SWITCHINGU element is connected, and the exposure means equipped with two or more light-emitting-device array blocks which have the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, c. Simultaneous luminescence of the 1 light-emitting-device array block is carried out. two or more light-emitting-device array blocks Every block The 1st scanning signal is impressed to the 1st driving means made to operate sequentially and the 1st wiring group of d. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned

1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the image formation equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 2nd feature and has two or more trains and the light emitting device which carried out multi-line arrangement to a. photo conductor and b. photo conductor in the 3rd, The SWITCHINGU element array which has two or more SWITCHINGU elements with which it was made to connect for every light emitting device in every line, was made to correspond for every line of this, and was arranged to the multi-line, Classify the SWITCHINGU element array for every line of this into two or more groups, and for every group of two or more this classified SWITCHINGU elements For every 1st wiring group to which the 1st terminal of a SWITCHINGU element is connected in common, and this SWITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SWITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to an exposure means to perform exposure to the aforementioned photo conductor, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the image formation equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 3rd feature and has two or more trains and the light emitting device which carried out multi-line arrangement to a. photo conductor and b. photo conductor in the 4th, The SWITCHINGU element array which has two or more SWITCHINGU elements with which it was made to connect for every light emitting device in every line, was made to correspond for every line of this, and was arranged to the multi-line, Classify the SWITCHINGU element array for every line of this into two or more groups, and for every group of two or more this classified SWITCHINGU elements The 1st wiring group in every [ to which the 1st terminal of a SWITCHINGU element is connected in common ] line, Two or more 2nd wiring groups which wired independently for every SWITCHINGU element for every line of this the line whole [ to which the 2nd terminal of a SWITCHINGU element is connected ], It has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. and by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to the 1st wiring group of at least one line of the 1st wiring groups of the exposure means and c. multi-line which perform exposure to the aforementioned photo conductor. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. at least one 2nd wiring group in two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the above -- even if few -- the 1st wiring group of one line -- the 2nd scanning signal -- impressing -- the above -- even if few -- the one 2nd wiring group -- this -- The 1st driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this information signal may discharge simultaneously, And the 1st scanning signal is impressed to the 1st wiring group of the other bank of the 1st wiring groups of d. multi-line. other 2nd wiring groups of two or more 2nd wiring groups -- this -- it is made to synchronize with the 1st scanning signal, the voltage signal of another side polarity is impressed, and the capacitor based on this voltage signal discharges simultaneously -- as -- the aforementioned simultaneous

luminescence circuit Make it synchronize with the 2nd scanning signal, and, on the other hand, a polar voltage signal is impressed. it operates -- making -- the above -- the 1st wiring group of an other bank -- the 2nd scanning signal -- impressing -- the 2nd wiring group besides the above -- this -- To the image formation equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 4th feature and has the light emitting device arranged on the other hand to the 5th at \*\*, [ two or more ] The SWITCHINGU element array which has two or more SWITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SWITCHINGU element array into two or more groups, and for every group of two or more this classified SWITCHINGU elements For every 1st wiring group to which the 1st terminal of a SWITCHINGU element is connected in common, and this SWITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SWITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. The 1st scanning signal is impressed to a luminescence means to perform simultaneous luminescence from this light-emitting-device array, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the luminescence equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 5th feature and has the light emitting device arranged on the other hand to the 6th at \*\*, [ two or more ] The SWITCHINGU element array which has two or more SWITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SWITCHINGU element array into two or more groups, and for every group of two or more this classified SWITCHINGU elements For every 1st wiring group to which the 1st terminal of a SWITCHINGU element is connected in common, and this SWITCHINGU element The 2nd wiring group to which the 2nd terminal of a SWITCHINGU element is connected, and the luminescence means equipped with two or more light-emitting-device array blocks which have the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, c. Simultaneous luminescence of the 1 light-emitting-device array block is carried out. two or more light-emitting-device array blocks Every block The 1st scanning signal is impressed to the 1st driving means made to operate sequentially and the 1st wiring group of d. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the luminescence equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 6th feature and has two or more trains and the light emitting device which carried out multi-line arrangement in the 7th, Have two or more SWITCHINGU elements with which it was made to connect for every light emitting device of a multi-line, and the SWITCHINGU element of one line is made to correspond for every line. The SWITCHINGU element array and the SWITCHINGU element for every line which were arranged to the multi-line by this are classified into two or more groups. The 1st wiring group to which

the 1st terminal of a SWITCHINGU element is connected in common for every group of two or more classified this SWITCHINGU elements, The 2nd wiring group to which the 2nd terminal of a SWITCHINGU element is connected for every SWITCHINGU element of this, And the luminescence means which has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, and carries out simultaneous luminescence from this light-emitting-device array, Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. and the 1st wiring group of c. above -- the 1st scanning signal -- impressing -- the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the luminescence equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously Have the light-emitting-device array which has the 7th feature and has two or more trains and the light emitting device which carried out multi-line arrangement in the 8th, and two or more SWITCHINGU elements with which it was made to connect for every light emitting device of a multi-line, and the SWITCHINGU element of one line is made to correspond for every line. by this The SWITCHINGU element array and the SWITCHINGU element for every line which were arranged to the multi-line are classified into two or more groups. The 1st wiring group for every [ to which the 1st terminal of a SWITCHINGU element is connected in common for every group of two or more classified this SWITCHINGU elements ] line, Two or more 2nd wiring groups to which the 2nd terminal of a SWITCHINGU element is connected for every SWITCHINGU element for every line of this and which wired independently for every line, And the luminescence means which has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, and carries out simultaneous luminescence from this light-emitting-device array, c. The 1st scanning signal is impressed to the 1st wiring group of at least one line of the 1st wiring groups of a multi-line. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. at least one 2nd wiring group in two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the above -- even if few -- the 1st wiring group of one line -- the 2nd scanning signal -- impressing -- the above -- even if few -- the one 2nd wiring group -- this -- The 1st driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this information signal may discharge simultaneously, And the 1st scanning signal is impressed to the 1st wiring group of the other bank of the 1st wiring groups of d. multi-line. Make it synchronize with the 1st scanning signal, and the voltage signal of another side polarity is impressed. other 2nd wiring groups of two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and, on the other hand, a polar voltage signal is impressed. the above -- the 1st wiring group of an other bank -- the 2nd scanning signal -- impressing -- the 2nd wiring group besides the above -- this -- To the luminescence equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously, it has the 8th feature.

[0010] In the 1st example of a mode with a desirable this invention, the aforementioned light emitting device is an element which has an organic light emitting device.

[0011] In the 2nd example of a mode with a desirable this invention, the aforementioned photo conductor is organic or an inorganic electrophotography photo conductor.

[0012] In the 4th example of a mode with a desirable this invention, the aforementioned SUITCHINGU element is TFT, and the 1st terminal of the above is a gate terminal, and the 2nd terminal of the above is a source terminal.

[0013] In the 5th example of a mode with a desirable this invention, one chip fabrication of the aforementioned SUITCHINGU element array is carried out.

[0014]

[Embodiments of the Invention] The example of this invention is explained according to a drawing. Drawing 1 is the cross section of the image formation equipment which used the luminescence equipment of this invention as an aligner, especially a color electrophotography copying machine.

[0015] Printed material, such as a form, is contained by the cassette 6 and makes printed material feed to a mechanical component towards the conveyance section in the color copying machine shown in this drawing with operation of image formation (henceforth a print) from a cassette 6. The conveyance belt 31 can carry out the both-way run of between a roller 35 and rollers 36 and 37 by carrying out the suspension of the conveyance belt 31 between the drive roller 35 and two follower rollers 36 and 37, forming the conveyance section in it, and carrying out the rotation drive of the drive roller 35 by the motor 38 here. In addition, the direction which runs is a direction shown in the arrow A in drawing in the belt 31 bottom.

[0016] The image formation units Pa, Pb, Pc, and Pd of four units are formed along the direction where the conveyance belt 31 extends. These image formation units Pa, Pb, Pc, and Pd have the respectively same composition, and explain the composition roughly hereafter taking the case of the image formation unit Pa of the 1st amorous glance.

[0017] In the image formation unit Pa, the cylinder-like photo conductor which approaches the conveyance belt 31 and rotates in the direction of arrow B, i.e., photoconductor drum 1a, is arranged. The photosensitive layer of the front face is uniformly charged with rotation of photoconductor drum 1a by primary electrification machine 4a constituted from zone-of-contact electrical machinery. Then, the light figure of the yellow component of a manuscript picture is exposed by luminescence from exposure means 8a using the aforementioned one chip light-emitting-device array which exposes the horizontal-scanning whole region of a photoconductor drum, and a yellow component static latent image is formed in this electrification photosensitive layer of it. The portion in which this latent image was formed moves by the rotation one by one, reaches the position of yellow development counter 2a, is developed by the yellow toner supplied from yellow development counter 2a in the position, and is visualized.

[0018] A yellow toner image results in an imprint part with corona-electrical-charging machine 3a prepared through the conveyance belt 31 with this drum 1a by rotation of photoconductor drum 1a. Timing is doubled with this and printed material is conveyed by the imprint part with the conveyance belt 31. Next, by impressing imprint bias to corona-electrical-charging machine 3a, the yellow toner image on photoconductor drum 1a is imprinted on printed material with rotation of photoconductor drum 1a, and goes.

[0019] Then, with rotation of photoconductor drum 1a, the toner which remains on it is removed by cleaning equipment (not shown), and will be in the state where it can go into the following image formation process. On the other hand, the printed material by which the yellow toner image was imprinted is conveyed with the conveyance belt 31 by the print section by the image formation unit Pb of the 2nd amorous glance.

[0020] The image formation unit Pb of the 2nd amorous glance is the same composition as the image formation unit Pa of the 1st amorous glance mentioned above, and like the above by luminescence from exposure means 8b using the one chip light-emitting-device array The light figure of the Magenta component of a manuscript picture is exposed, a Magenta component static latent image is formed, development by the Magenta toner is performed, and in the imprint section, on printed material, the obtained Magenta toner image lays on top of the yellow toner

image of the 1st amorous glance, and is imprinted. Similarly, with conveyance of printed material, you form a cyanogen component static latent image and a black component static latent image, respectively, a cyano toner image and a black toner image make it imprint in piles in each process by luminescence by the exposures meanses 8c and 8d using each one chip light-emitting-device array in the image formation units Pc and Pd, and the color picture which piled up the toner image of four colors on printed material is formed.

[0021] In the image formation units Pb, Pc, and Pd of the 2nd amorous glance of the above, the 3rd amorous glance, and the 4th amorous glance Photoconductor drums 1b, 1c, and 1d, Magenta development counter 2b, cyano development counter 2c and 2d of black development counters, the corona-electrical-charging machines 3b, 3c, and 3d, and the primary electrification machines 4b, 4c, and 4d constituted from zone-of-contact electrical machinery are used like the image formation unit Pa of the 1st amorous glance, respectively.

[0022] After ending the stroke of the image formation units Pa, Pb, Pc, and Pd, after the printed material by which the toner image of four colors was imprinted is conveyed further and discharged with the separation electric discharge vessel 7, it dissociates from the conveyance belt 31 and it is sent to fixing equipment 5 equipped with the fixing roller 51 and the pressurization roller 52 of a couple. Here, usually, pressurization and heating are performed by the nip section of the rollers 51 and 52 currently heated by predetermined temperature, and fixing of an imprint toner image is performed. Then, printed material is discharged by outside the plane [ of a copying machine ].

[0023] Drawing 2 is a block diagram illustrating the detail of the image formation units Pa, Pb, Pc, and Pd illustrated to drawing 1.

[0024] The exposure meanses 8a, 8b, 8c, and 8d which the image formation units Pa, Pb, Pc, and Pd were made to correspond to photoconductor drums 1a, 1b, 1c, and 1d, respectively, and have been arranged are loaded with light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black. Such light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black It lets the wiring sections 201a, 201b, 201c, and 201d which consist of a high-density outgoing line, respectively pass. Yellow signal drive circuit (IC) connect with 202a, Magenta signal drive (circuit IC) 202b, cyano signal drive (circuit IC) 202c, and black signal drive (circuit IC) 202d, and by operation by these drive circuits Each light emitting device is controlled by either luminescence or un-emitting light. According to the picture signal from yellow signal generating circuit 204a, Magenta signal generating circuit 204b, cyano signal generating circuit 204c, and 204d of black signal generating circuits, it is set up so that luminescence operation of a light-emitting-device array can be controlled. The light emitting device used by above-mentioned light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black forms the array (array object) which the single tier was made to arrange by the high resolution of for example, 1200dpi.

[0025] Moreover, in light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black, the following switching element circuit and the sample hold circuit are formed, and the timing of each drive operation of the gate line in these circuits is controlled by gate drive circuit 203for yellow a, gate drive circuit 203for Magentas b, gate drive circuit 203for cyanogen c, and 203d of gate drive circuits for black. And control of the picture signal of control of this gate drive operation and yellow, a Magenta, cyanogen, and a black signal is performed by the image-information-processing equipment 205 in CPU (not shown).

[0026] The one chip light-emitting-device array which has covered and arranged the whole region of the horizontal-scanning distance D in the main scanning direction to the rotation of photoconductor drums 1a, 1b, 1c, and 1d is used light-emitting-device array 200for yellow a

used by this invention, light-emitting-device array 200 for Magentas b, light-emitting-device array 200 for cyanogen c, and light-emitting-device array 200d for black. These light-emitting-device arrays 200a, 200b, 200c, and 200d are accumulated on the one chip in which two or more light emitting devices arranged 600 dpi by the above 1200dpi resolution which is high resolution, or the high resolution beyond it cover the whole region of the horizontal-scanning distance D of a photo conductor.

[0027] By the desirable example of this invention, the above-mentioned one chip light-emitting-device array used by above-mentioned light-emitting-device array 200 for yellow a, light-emitting-device array 200 for Magentas b, light-emitting-device array 200 for cyanogen c, and light-emitting-device array 200d for black is created from the single substrate which lower-\*\*, and uses for four what carried out cutting separation and was obtained, respectively.

[0028] The arrow C in drawing shows the direction of vertical scanning of the photo conductor which rotates. moreover, photoconductor drums 1a, 1b, 1c, and 1d The aluminium pipe of the same diameter (for example, the diameter of 60cm, 30cm, 20cm) was used, the photosensitive layer (for example, an organic photoelectrical body whorl with four [ same ] or the same a-Si photosensitive layer) of the same kind was used, therefore the traverse speed of the direction C of vertical scanning was set up identically respectively.

[0029] Drawing 3 is the perspective diagram of the one chip light-emitting-device array substrate 300 in the process before carrying out cutting separation along with the cutting part lose contact 302 four, respectively from the glass substrate 303 used as the single substrate which formed the one chip light-emitting-device array 301 used by the above-mentioned light-emitting-device array 200 for yellow a, light-emitting-device array 200 for Magentas b, light-emitting-device array 200 for cyanogen c, and light-emitting-device array 200d for black prepared on the glass substrate 303.

[0030] If it is the size which can form a light-emitting-device array by the one chip, there will be especially no limit in the size of the glass substrate 303 used by this invention.

[0031] Drawing 4 illustrates the equal circuit for every one chip light-emitting-device array 301 illustrated to drawing 3. light emitting devices OEL1, OEL2, OEL3, and OEL4 -- when ... is carried in an electrophotography copying machine, along with the main scanning direction to the move hand of cut of a photoconductor drum, more than one are arranged and it connects with a single tier in an active-matrix circuit this active-matrix circuit -- switching elements SW1, SW2, SW3, and SW4 -- as ... using TFT -- suitable -- \*\*\*\* -- the odd-numbered light emitting devices OEL1 and OEL3 and ... the light-emitting-device group (the 1st group) classified as OEL (2N-1) It connects with each gate terminal of SW (2N-1) in common through the gate line G1. the odd-numbered switching elements SW1 and SW3 and ... the even-numbered light emitting devices OEL2 and OEL4 and ... the light-emitting-device group (the 2nd group) classified as LEL (2Ns) -- the even-numbered switching elements SW2 and SW4 and ... it connects with each gate terminal of SW (2Ns) in common through the gate line G2 the above "N" -- 1, 2, 3, 4, and 5 -- it is the integer of ... and light-emitting-device OEL1-OEL2 which adjoins each other in this active-matrix circuit, OEL3-OEL4, and ... switching element SW1-SW2 which adjoins each other in every OEL(2N-1)-OEL (2Ns), SW3-SW4, and ... the source terminal of every SW(2N-1)-SW (2Ns) -- each source lines I1 and I2 -- it connects in common through ... Moreover, light emitting devices OEL1, OEL2, OEL3, and OEL4 ... It connects with the common line C0 in common, and a counter electrode is each light emitting device OEL1, OEL2, OEL3, and OEL4... It can consider as an anode or a cathode.

[0032] the desirable example of this invention -- switching elements SW1, SW2, SW3, and SW4 ... and light emitting devices OEL1, OEL2, OEL3, and OEL4 -- sample hold circuits SH1, SH2, SH3, and SH4 and ... are connected between ... These sample hold circuits SH1, SH2, SH3, and SH4 and ... respectively -- the capacitors C1, C2, C3, and C4 for charge storages ... having -- \*\*\*\* -- the capacitors C1, C2, C3, and C4 for these charge storages ... Connect with the switching element for sample hold which connected the gate to the common path cord S0,



respectively, and it is made to synchronize with the rotation of a photoconductor drum, and it is set up so that the gate of the switching element for sample hold may turn on or turn off in predetermined interval time. Under the present circumstances, capacitors C1, C2, C3, and C4 for charge storages ... A counter electrode is set as a ground or predetermined DC bias VG. Moreover, according to an outside temperature, a time (lifetime), etc., it can carry out adjustable [ of the amount of bias of this predetermined DC bias VG ].

[0033] Drawing 5 is illustrating the drive of the active-matrix circuit illustrated to drawing 4. In the first half of 1 horizontal-scanning period corresponding to one scanning interval by the laser to a photoconductor drum, it is made to synchronize with the gate-on pulse to the gate lines G1 and G2, and the pulse of the peak value which answered the picture signal which is a polar voltage signal (polarity is based on the applied voltage to a path cord C0) on the other hand is impressed to the source lines I1 and I2. This one side polarity voltage signal is made to respond to the gradation information on image information, and each peak value is set up. Moreover, in another desirable example, it can be made to be able to respond to the gradation information on image information, and pulse width or a pulse number can be changed. a path cord S0 -- the capacitors C1, C2, C3, and C4 for charge storages -- the charge by which accumulation maintenance was carried out as image information at ... light emitting devices OEL1, OEL2, OEL3, and OEL4 -- in order to carry out order electric discharge to ... and to make light emit, the gate-on pulse for setting the gate of the switching element for sample hold as ON is impressed the impression time of this gate-on pulse -- the capacitors C1, C2, C3, and C4 for charge storages -- it is set up so that it may be made to operate, after a charge is fully charged by ...

[0034] As for the pulse of a polar voltage signal, on the other hand in the second half of 1 continuing horizontal-scanning period, it is desirable for the voltage signal of reversed polarity to be impressed and to set a voltage average with a voltage signal as zero in the first half a voltage signal and the second half in this case, and to set [ which was synchronized with the gate-on pulse to the gate lines G1 and G2, and was used for source line I1I2 in the period of the first half ] up so that DC component may be lessened as much as possible. the operation same to a path cord S0 as the time of the first half -- the capacitors C1, C2, C3, and C4 for charge storages -- the charge by which accumulation maintenance was carried out at ... light emitting devices OEL1, OEL2, OEL3, and OEL4 -- it reverse-discharges to ... The state where light is not emitted is formed by this reverse electric discharge.

[0035] Drawing 6 illustrates one of the desirable examples of the light-emitting-device array of this invention. this light-emitting-device array -- the [ the 1st light-emitting-device array block, the 2nd light-emitting-device array block, and ] -- it is classified into three blocks which consist of 3 light-emitting-device array blocks, and the circuit which illustrates every block to drawing 4 is incorporated under the present circumstances, in the example of drawing 6, it is set as the wiring for a time-sharing drive with three time sharing -- having -- every block -- the [ the 1st gate line block (G11, G12, G13), the 2nd gate line block (G21, G22, G23), and ] -- 3 gate line block (G31, G32, G33) is wired The source line corresponding to an information signal line may be wired in common for every light-emitting-device array block, and can decrease the number of wiring by this. Moreover, for every light-emitting-device array block, an information line can also be wired independently and the time of 1 horizontal-scanning period can be sharply shortened by this.

[0036] the [ the 1st light-emitting-device array block the 2nd light-emitting-device array block, and ] -- in the first half, 3 light-emitting-device array block has a scan in the first half a scan and the second half, respectively, and it produces order electric discharge by scan, and in the second half, it impresses a gate-on pulse to path cords S1, S2, and S3 so that reverse electric discharge may be produced by scan Moreover, in the first half, reverse electric discharge may be produced by scan and order electric discharge may be produced by scan in the second half.

[0037] Drawing 7 is illustrating the example of a drive of the light-emitting-device array of

drawing 6 . The charge to the capacitor for charge storages is started by the impression start of the gate-on pulse to the 1st gate line block (G11, G12, G13), and the electric discharge to each light emitting device from each capacitor for charge storages is started by the impression start of the gate-on pulse to a path cord S1. By this, luminescence from a light emitting device can be operated simultaneously the whole block. Then, the charge to the capacitor for charge storages is started by the impression start of the gate-on pulse to the 1st gate line block (G11, G12, G13), and the reverse electric discharge to each light emitting device from each capacitor for charge storages is started by the impression start of the gate-on pulse to path cords S1, S2, and S3.

[0038] Reach the 2nd gate line block (G21, G22, G23), it is made to operate one by one like the above also about the 3rd gate line block (G31, G32, G33), and 1 horizontal scanning is performed.

[0039] Drawing 8 shows the cross section about 1 bit of the element structure used in the circuit illustrated to drawing 4 . Among drawing, 801 are a substrate and insulators, such as glass and plastics, are used. On the substrate, the switching element section SW1, the sample hold circuit section SH1, and the light-emitting-device section OEL1 are formed. The switching element section SW1 has the 1st transistor structured division constituted by the gate electrode 802, the gate insulator layer 803, the thin-film-semiconductor layer 804, the source electrode 805, and the drain electrode 806. The sample hold circuit section SH1 has the 2nd transistor structured division constituted by the capacitor section for charge storages constituted by the insulator layer 809 prepared in inter-electrode [ of the electrode 807-808 of a couple, and this couple ] and the gate electrode 810, the gate insulator layer 811, the thin-film-semiconductor layer 812, the source electrode 813, and the drain electrode 814. The light-emitting-device section OEL1 is the light-emitting-device section constituted by the luminous layer 817 prepared in inter-electrode [ of the electrode 815-816 of a couple, and this couple ].

[0040] the [ the 1st used by this invention, and ] -- as thin-film-semiconductor layers 804 and 812 of 2 transistor sections, a thin film amorphous silicon, thin film polycrystal silicon, or single-crystal-thin-film silicon can be used, and a thin film silicon nitride and thin film tantalum oxide can be used as gate insulator layers 803 and 811. Moreover, as for the electrode of a couple used in the light-emitting-device section OEL1, it is desirable to use one of these as an anode, to use another side as a cathode, and to use reflection nature metal membranes, such as aluminum, silver, zinc, gold, and chromium, as an electrode of another side, using transparent electric conduction films, such as ITO (an indium and stannic-acid ghost) and a tin oxide, as an electrode corresponding to the luminescence direction of radiation.

[0041] Moreover, in order to prevent degradation of a luminous layer in this invention, a wrap's is desirable by the sealing agent in this luminous layer. As this sealing agent, organic insulation resins, such as inorganic insulating material, such as a silicon oxide and a silicon nitride, and epoxy, can be used.

[0042] Next, although the luminous layer 817 suitably used by this invention is organic electroluminescence (OEL), inorganic [ EL ] can also be used for it by this invention.

[0043] The example of OEL which can be used by this invention is indicated below.

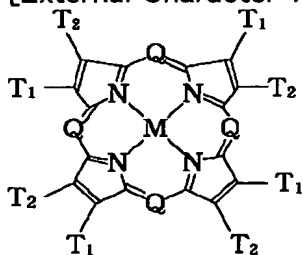
[0044] As a material in OEL used by this invention EPA349,265 of Scozzafava ; (1990) U.S. patent No. 4,356,429; [ of Tang ] U.S. patent No. 4,539,507; [ , such as VanSlyke, ] U.S. patent the 4,720,432; , such as VanSlyke U.S. patent No. 4,769,292; [ , such as Tang, ] U.S. patent No. 4,885,211; [ , such as Tang, ] U.S. patent the 4,950,950; , such as Perry U.S. patent No. 5,059,861; [ , such as Littman, ] U.S. patent No. 5,047,687; [ of VanSlyke ] U.S. patent No. 5,073,446; [ , such as Scozzafava, ] U.S. patent No. 5,059,862; [ , such as VanSlyke, ] The thing of an indication can be used [ U.S. patent / of VanSlyke etc. / No. 5,061,617 /; U.S. patent / of VanSlyke / No. 5,151,629 /; U.S. patent / of Tang etc. / No. 5,294,869 /; U.S. patent / of Tang etc. / No. 5,294,870 ]. EL layer consists of organic hole pouring in contact with an anode plate and a move

band, and the electron injection and move band that form organic hole pouring, and a move band and junction. Hole pouring and a move band may be formed from a single material or two or more single material, and consist of a hole pouring layer in contact with the continuous hole moving bed infixed between an anode plate and a hole pouring layer, an electron injection, and a move band. Similarly, an electron injection and a move band may be formed from single material or two or more material, and consist of an electron-injection layer in contact with the continuous electronic-transition layer infixed between an anode plate and an electron-injection layer, hole pouring, and a move band. A hole, electronic reunion, and luminescence are generated within the electron injection which adjoins junction of an electron injection, a move band and hole pouring, and a move band, and a move band. Although it deposits by vacuum evaporation typically, it deposits with other conventional technology again, and deals in the compound which forms an OEL layer.

[0045] The organic material which consists of a hole pouring layer in the desirable example is :

[0046] which has the following general formulas.

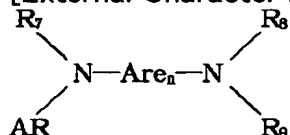
[External Character 1]



A metal, a metallic oxide, or the metal halogenides T1 and T2 fill both the unsaturation six membered rings in which N or C-RM expresses hydrogen, or :Q contains a displacer like an alkyl or a halogen here. While a desirable alkyl portion contains the carbon atom of about 1 to 6, it constitutes an allyl-compound portion with a desirable phenyl.

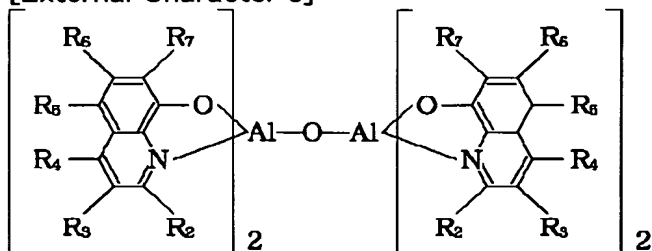
[0047] In the desirable example, the hole moving bed is an aromatic tertiary amine. The desirable subclass of an aromatic tertiary amine is : [0048] containing the tetrapod allyl-compound diamine which has the following formulas.

[External Character 2]



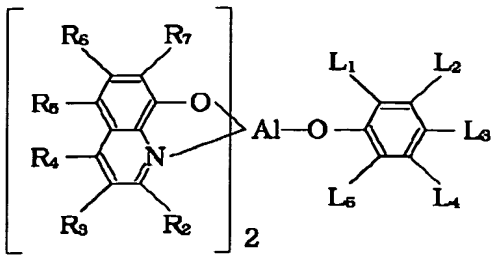
Are is a propine group here, n is the integer of 1 to 4, and it is Ar, R7, R8, and R9. It is the allyl-compound group chosen, respectively. In the desirable example, luminescence, an electron injection, and a move band contain a metal oxy-NOIDO (oxinoid) compound. The desirable example of a metal oxy-NOIDO compound is : [0049] which has the following general formulas.

[External Character 3]



It is R2-R7 here. Replacement possibility is expressed. At other desirable examples, a metal oxy-NOIDO compound is : [0050] which has the following formulas.

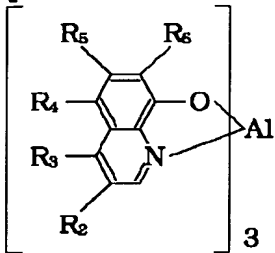
[External Character 4]



here -- R2-R7 a definition is given above -- having -- L1-L5 -- intensive -- 12 or a fewer carbon atom -- containing -- respectively -- separate -- the hydrogen or the carbohydrate group of a carbon atom of 1 to 12 -- expressing -- L1 and L2 -- both -- or both L2 and L3 can form the united benzo ring In other desirable examples, metal oxy-NOIDO compounds are the following formulas.

[0051]

[External Character 5]



It is R2-R6 here. Hydrogen or other replacement possibility are expressed. It is only that the above-mentioned example expresses the existing desirable organic material which is only used within an electroluminescence layer. It does not mean that they restrict the visual field of this invention, and, generally this directs an organic electroluminescence layer. Organic EL material contains the coordination compound which has an organic ligand so that the above-mentioned example may show.

[0052] As a segment electrode 403 used by the light emitting device of this invention, reflection nature metals, such as aluminum, silver, zinc, gold, and chromium, can be used, and transparent electric conduction films, such as indium teens OKISAIZU and a tin oxide, can be used as a counterelectrode 402.

[0053] As a sealing agent 405 used by this invention, it is closed with organic insulation resins, such as inorganic insulating material, such as a silicon oxide and a silicon nitride, and epoxy. Moreover, as a protective layer 404 used by this invention, the coat material by organic insulation resins, such as inorganic insulating material, such as a silicon oxide and a silicon nitride, and epoxy, can be used.

[0054] With the image formation equipment of this invention, inorganic photo conductive materials, such as organic photo conductive materials, such as BENZO oxazole system photo conductor matter, BENZO thiazole system photo conductor matter, and triphenylamine system photo conductor matter, or amorphous silicon (a-Si) photo conductor matter, amorphous silicon germanium alloy (a-SiGe) photo conductor matter, and amorphous silicon carbon alloy (a-SiC) photo conductor matter, can be used as a photo conductors [ 1a, 1b, 1c and 1d ] photosensitive layer.

[0055] Thus, on the created element, 150nm of silicon nitrides was formed in the spatter, and the protective layer was formed for closure. In addition, protective-layer formation performed membrane formation within the same vacuum system from organic layer membrane formation.

[0056] What has a big work function as an anode material organic [ Light Emitting Diode ] is desirable, and can use a tin oxide, gold, platinum, palladium, a selenium, iridium, copper iodide, etc. other than ITO used by this example.

[0057] On the other hand, what has a work function small as a cathode material is desirable, and can use Mg, aluminum, Li, In(s), or these alloys other than Mg/Ag used by this example.

[0058] About an electron hole transporting bed, the hole transportability compound expressed to the following table other than TPD can be used.

[0059] Moreover, you may use not only an organic material but inorganic material. a-Si, a-SiC, etc. are raised as inorganic material used.

[0060] As an electronic transporting bed, it is Alq3. The electronic transportability compound otherwise expressed to the following table can be used.

[0061] Moreover, dopant coloring matter as shown in the following table 10 can also be doped to an electronic transporting bed or an electron hole transporting bed.

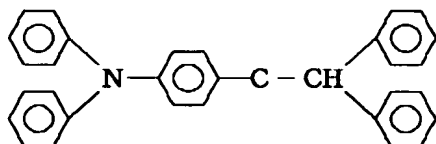
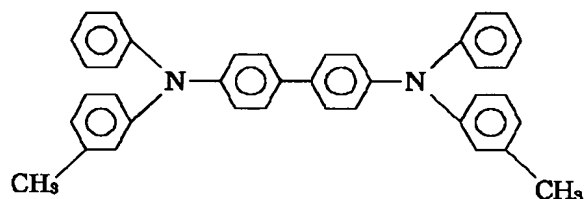
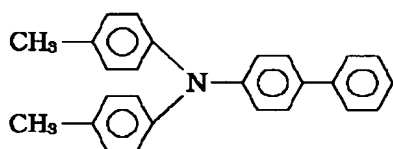
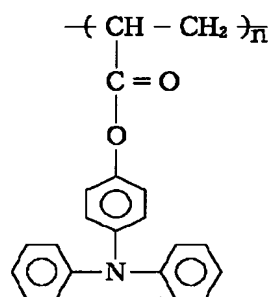
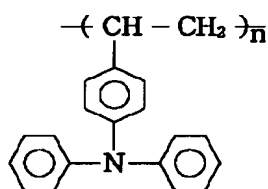
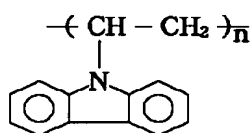
[0062] As for a material organic [ Light Emitting Diode ], it is desirable to choose what considers spectrum luminescence with sensitivity as the photoconductor drum to be used.

[0063]

[External Character 6]

ホール輸送性化合物

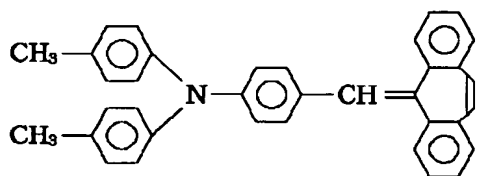
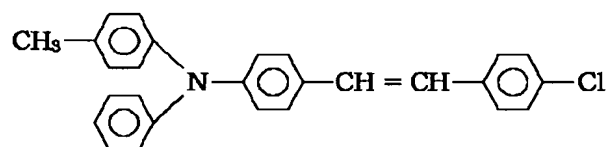
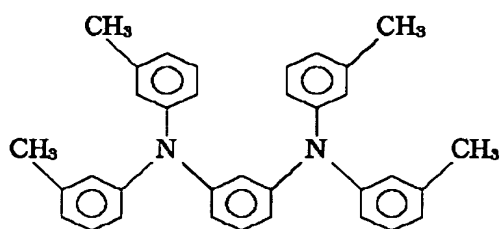
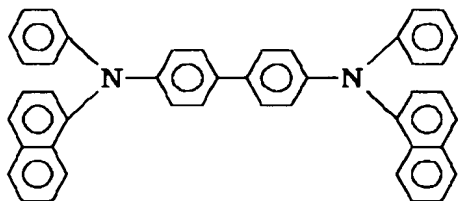
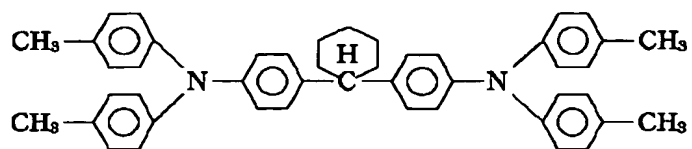
ホール輸送体



[0064]

[External Character 7]

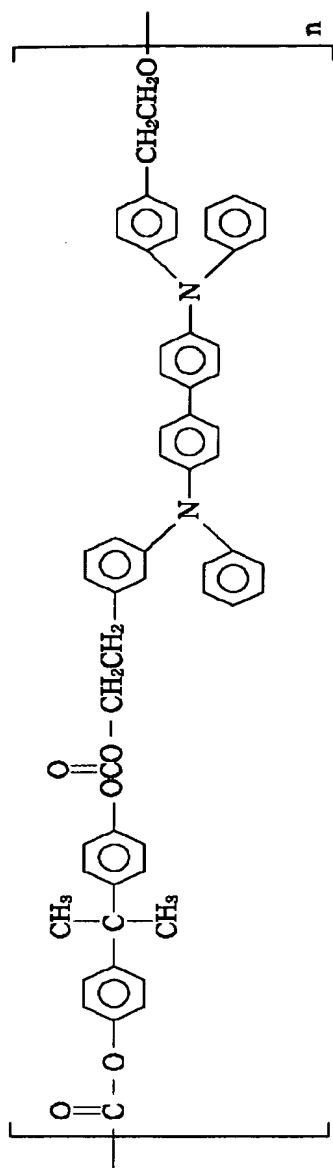
ホール輸送性化合物



[0065]

[External Character 8]

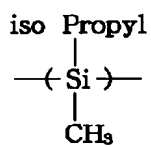
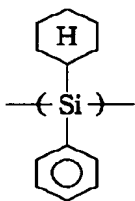
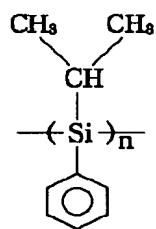
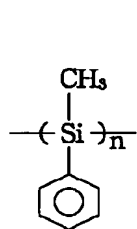
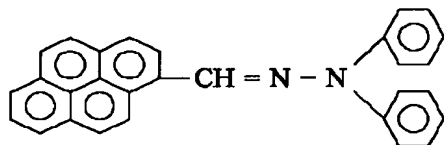
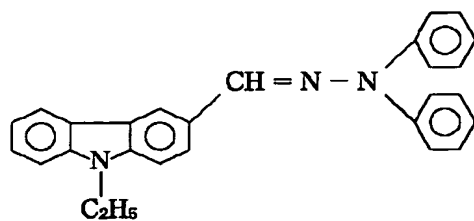
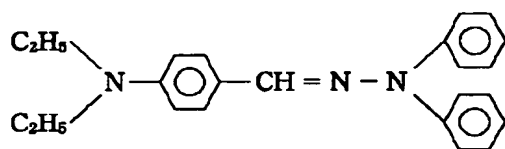
ホール輸送性化合物



[0066]

[External Character 9]

ホール輸送性化合物

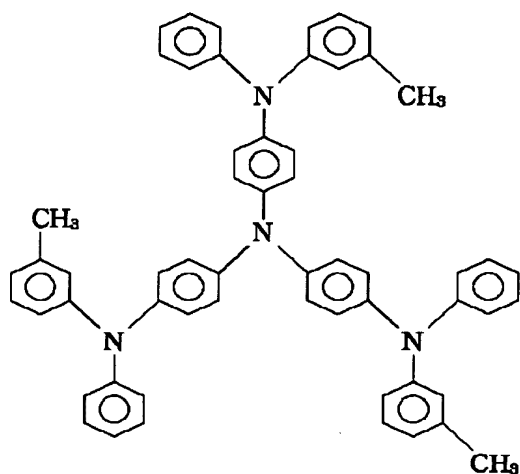
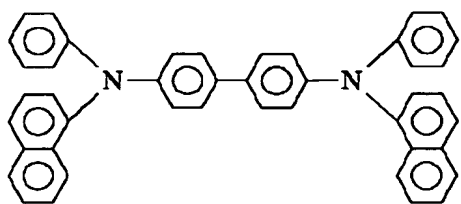


[0067]

[External Character 10]



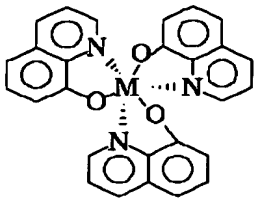
ホール輸送性化合物



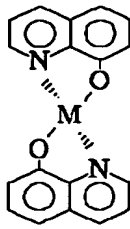
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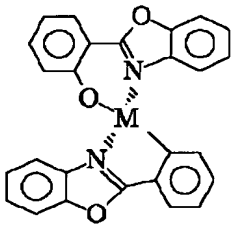
電子輸送性化合物



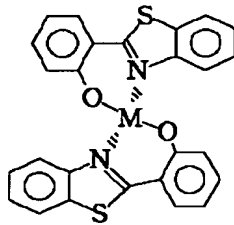
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M : Zn, Mg, Be



M : Zn, Mg, Be

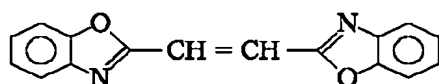
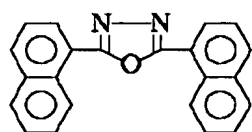
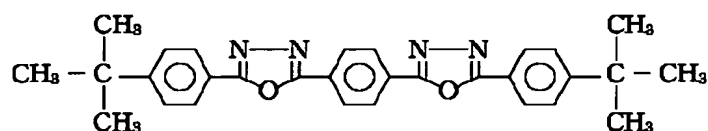
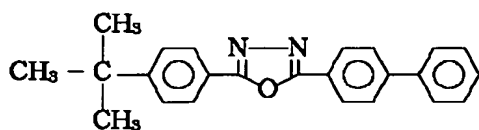


M : Zn, Mg, Be

[0069]

[External Character 12]

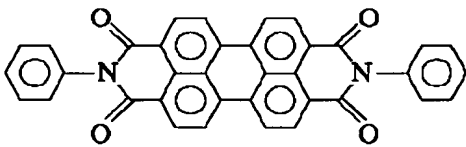
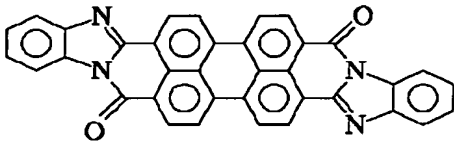
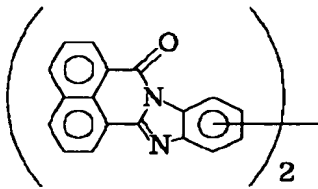
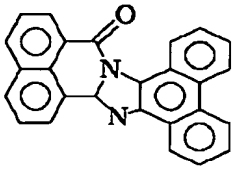
電子輸送性化合物



[0070]

[External Character 13]

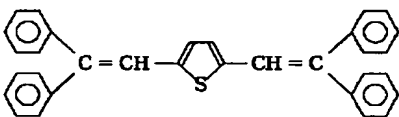
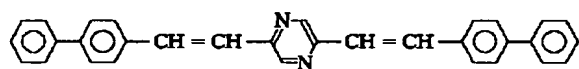
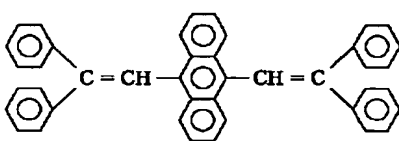
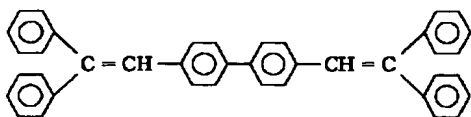
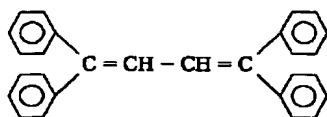
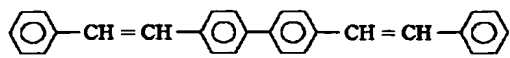
電子輸送性化合物



[0071]

[External Character 14]

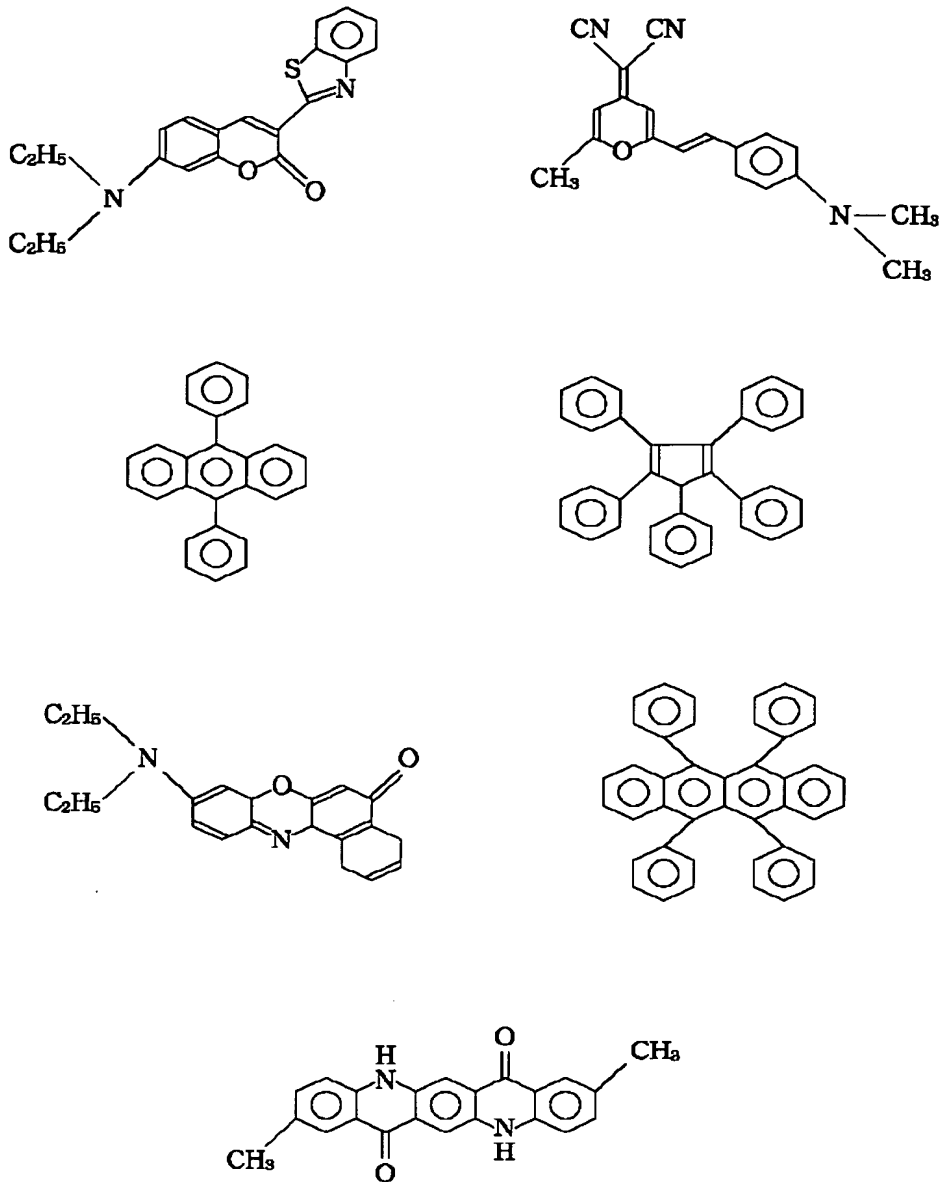
電子輸送性化合物



[0072]

[External Character 15]

ドーパント色素



[0073] Drawing 9 is the light emitting device of another desirable mode of this invention. The luminous layer 817 which the same thing as the switching element section SW1 and the sample hold circuit section SH1 which were used by drawing 8 was prepared on the downward substrate 801, and was prepared in inter-electrode [ of the electrodes 816 and 815b of the couple for forming a 1-bit light-emitting part on the upper substrate 901 (insulating substrates, such as glass) and this couple ] is arranged. The substrates 801 and 901 of these couples carry out opposite arrangement towards the inside, and electrode 815a on a substrate 801 and electrode 815b on a substrate 901 are electrically connected by the electroconductive glue (adhesive electrical connection object) 902.

[0074] The adhesive electrical connection object 902 is acquired by making the predetermined position of the upper substrate 901, the lower substrate 801, or its both apply and dry this by adoption of screen printing, offset printing, or the dispenser applying method using the electroconductive glue by which distributed content of a conductive particle like a carbon particle, and a silver-granule child and a copper particle was carried out into an epoxy system

or phenol system heat-curing adhesives.

[0075] In order to reinforce interface adhesive strength, silane coupling agents, such as N-(2-aminoethyl)-3-aminopropyl methyl dimethoxysilane, N-(2-aminoethyl)-3-aminopropyl trimethoxysilane, 3-aminopropyl trimethoxysilane, 3-aminopropyl methyldiethoxysilane, and 3-glycidoxypropyltrimethoxysilane, can be made to contain in an above-mentioned electroconductive glue.

[0076] A pewter etc. is mentioned as other examples of the adhesive electrical connection object 902.

[0077] The adhesive electric insulation object 903 is formed in the periphery section of the above-mentioned adhesive electrical connection object 902. The adhesive electric insulation object 903 is acquired by making the predetermined position of the upper substrate 901, the lower substrate 801, or its both apply and dry an epoxy system or phenol system insulation adhesives by methods, such as offset printing, screen printing, or the dispenser applying method. Under the present circumstances, it is suitable to use the manufacture method of preparing an electroconductive glue to the substrate of the direction in which insulating adhesives are formed to one substrate of the upper substrate 901 or a substrate 801, and these insulating adhesives are not formed, in the application of insulating adhesives and an electroconductive glue.

[0078] Moreover, in this invention, it can replace with the above-mentioned adhesive electric insulation object 903, and liquid insulators, such as liquid crystal like an insulator without adhesive strength, for example, an organic solvent, a high-boiling point organic solvent, a nematic liquid crystal, cholesteric liquid crystal, and a smectic liquid crystal, can also be used.

[0079] Moreover, the above-mentioned adhesive electric insulation object 903 or a non-adhesive property electric insulation object can also be made to contain coloring objects, such as a color pigment and a paint, so that it may have shading hardening.

[0080] Drawing 10 is another desirable example of this invention. The luminescence equipment illustrated to drawing 10 is equipped with the parallel one chip light-emitting-device array 100 of two lines which prepared the parallel one chip light-emitting-device array located in head line 100A and consecutiveness line 100B to the move direction of photo conductors, such as a photoconductor drum. It is good that it is made to perform the writing of one line by operation of this parallel one chip light-emitting-device array 100 of two lines.

[0081] Drawing 11 is the equal circuit of the parallel one chip light-emitting-device array 100 of two lines illustrated to drawing 10. The thing of the same equal circuit as the element illustrated to above-mentioned drawing 3, respectively can be used for the one chip light-emitting-device array of head line 100A and consecutiveness line 100B.

[0082] the light emitting devices OEL11, OEL12, OEL13, and OEL14 of head line 100A and head line 100A with which the one chip light-emitting-device array of consecutiveness line 100B is equipped -- the light emitting devices OEL21, OEL22, OEL23, and OEL24 of ... and consecutiveness line 100B -- when ... is carried in an electrophotography copying machine, along with the main scanning direction to the move hand of cut of a photoconductor drum, more than one are arranged, respectively and it connects with 2 parallel in an active-matrix circuit this active-matrix circuit -- switching elements SW11, SW12, SW13, and SW14 -- as ... using TFT -- suitable -- \*\*\*\* -- the odd-numbered light emitting devices OEL11 and OEL13 and ... the light-emitting-device group (the 1st group) classified as OEL1 (2N-1) It connects with each gate terminal of SW1 (2N-1) in common through the gate line G(100A) 1. the odd-numbered switching elements SW11 and SW13 and ... the even-numbered light emitting devices OEL12 and OEL14 and ... the light-emitting-device group (the 2nd group) classified as OEL1 (2Ns) -- the even-numbered switching elements SW12 and SW14 and ... it connects with each gate terminal of SW1 (2Ns) in common through the gate line G(100A) 2 And it sets in this active-matrix circuit. adjacent light-emitting-device OEL11-OEL12, OEL13-OEL14, and ... switching element SW11-SW12 which adjoins each other in every OEL1(2N-1)-OEL1 (2Ns), SW13-SW14, and ... for

the source terminal of every SW1(2N-1)-SW1 (2Ns) each source lines I (100A)1 and I (100A)2 -- it connects in common through ... Moreover, light emitting devices OEL11, OEL12, OEL13, and OEL14 ... It connects with the common line C0 in common, and a counter electrode is each light emitting device OEL11, OEL12, OEL13, and OEL14... It can consider as an anode or a cathode. furthermore, the switching elements SW11, SW12, SW13, and SW14 ... light emitting devices OEL11, OEL12, OEL13, and OEL14 -- the same sample hold circuit as the element of drawing 3 is connected between ... This sample hold circuit is equipped with the capacitor for charge storages, respectively, the capacitor for charge storages of an odd number train connects the gate to the common path cord S(100A) 1, and the gate is connected to the common path cord S(100A) 2, and the capacitor for charge storages of an even number train is synchronized with the rotation of a photoconductor drum, and it is set up so that the gate of the switching element for sample hold may turn on or turn off in predetermined interval time. [0083] the light emitting devices OEL21, OEL22, OEL23, and OEL24 of head line 100A and consecutiveness line 100B of parallel arrangement -- similarly in the active-matrix circuit linked to ... the odd-numbered light emitting devices OEL21 and OEL23 and ... the light-emitting-device group (the 1st group) classified as OEL2 (2N-1) It connects with each gate terminal of SW2 (2N-1) in common through the gate line G(100B) 1. the odd-numbered switching elements SW21 and SW23 and ... the even-numbered light emitting devices OEL22 and OEL24 and ... the light-emitting-device group (the 2nd group) classified as OEL2 (2Ns) -- the even-numbered switching elements SW22 and SW24 and ... it connects with each gate terminal of SW2 (2Ns) in common through the gate line G(100B) 2 And it sets in this active-matrix circuit. adjacent light-emitting-device OEL21-OEL22, OEL23-OEL24, and ... switching element SW21-SW22 which adjoins each other in every OEL2(2N-1)-OEL2 (2Ns), SW23-SW24, and ... for the source terminal of every SW2(2N-1)-SW2 (2Ns) each source lines I (100B)1 and I (100B)2 -- it connects in common through ... Moreover, light emitting devices OEL21, OEL22, OEL23, and OEL24 ... It connects with the common line C0 in common, and a counter electrode is each light emitting device OEL21, OEL22, OEL23, and OEL24... It can consider as an anode or a cathode. furthermore -- the same -- switching elements SW21, SW22, SW23, and SW24 ... and light emitting devices OEL21, OEL22, OEL23, and OEL24 -- to ... It \*\*\*\*\* a sample hold circuit and has the capacitor for charge storages, respectively. the capacitor for charge storages of an odd number train The gate is connected to the common path cord S(100B) 1, respectively, and, as for the capacitor for charge storages of an even number train, the gate is connected to the common path cord S(100B) 2, respectively.

[0084] As for the light emitting device arranged to head line 100A with the luminescence equipment described above, and the contiguity light emitting device arranged to consecutiveness line 100B, it is desirable to arrange in parallel to parallel of vertical scanning, i.e., the direction of a photoconductor drum, to the move direction of a photo conductor.

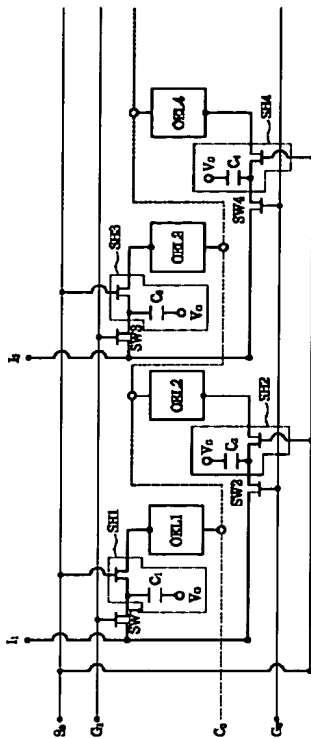
[0085] Drawing 12 is a drive sequence diagram in drive operation of the element illustrated to drawing 10 and 11. the source line I (100A) which becomes the relation of a contiguity light emitting device during the drive of the light-emitting-device array of head line 100A in the drive sequence illustrated to drawing 12 -- the 1, 2, ..., source line I (100B) -- as for the applied voltage impressed to 1, 2, and ..., it is good to set up so that it may consider as reversed polarity on the basis of C0 and the voltage average may become zero especially mutually

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[Translation done.]



Drawing selection [Representative drawing] 



[Translation done.]

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5

JAPANESE

[JP,11-198433,A]

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CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE  
INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

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[Translation done.]

**\* NOTICES \***

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- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

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**DESCRIPTION OF DRAWINGS**

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**[Brief Description of the Drawings]**

[Drawing 1] It is the cross section of the image formation equipment of this invention.

[Drawing 2] It is the block diagram of the exposure section used with the image formation equipment of this invention.

[Drawing 3] It is the perspective diagram of the one chip light-emitting-device array on the single substrate used by this invention.

[Drawing 4] It is the representative circuit schematic of the light-emitting-device array used by drawing 3 .

[Drawing 5] It is the drive sequence diagram of a light-emitting-device array used by drawing 4 .

[Drawing 6] It is the block diagram of another light-emitting-device array of this invention.

[Drawing 7] It is the drive sequence diagram of the light-emitting-device array illustrated to drawing 6 .

[Drawing 8] It is the cross section of a light emitting device used by this invention.

[Drawing 9] It is the cross section of another light-emitting-device section used by this invention.

[Drawing 10] It is the perspective diagram of another one chip light-emitting-device array used by this invention.

[Drawing 11] It is the representative circuit schematic of the light-emitting-device array used by drawing 10 .

[Drawing 12] It is the drive sequence diagram of a light-emitting-device array used by drawing 11 .


**[Description of Notations]**

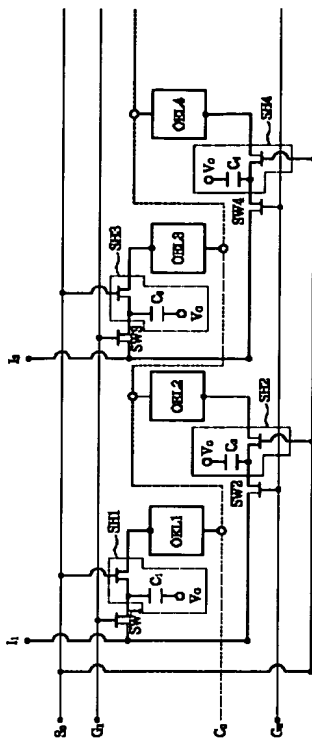
- 1a, 1b, 1c, 1d Photoconductor drum
- 2a, 2b, 2c, 2d Development counter
- 3a, 3b, 3c, 3d Corona-electrical-charging machine
- 4a, 4b, 4c, 4d Contact electrification machine
- 5 Fixing Equipment
- 6 Cassette
- 7 Separation Electric Discharge Machine
- 8a, 8b, 8c, 8d Exposure means
- Pa, Pb, Pc, Pd Image formation unit
- 31 Conveyance Belt
- 35 Drive Roller
- 36 Follower Roller
- 38 Motor
- 51 Fixing Roller
- 52 Pressurization Roller
- 200a The light-emitting-device array for yellow

- 200b The light-emitting-device array for Magentas
- 200c The light-emitting-device array for cyanogen
- 200d The light-emitting-device array for black
- 201 a-d Drawer wiring section
- 202a Yellow signal mechanical component
- 202b Magenta signal mechanical component
- 202c Cyano signal mechanical component
- 202d Black signal mechanical component
- 203a The gate drive circuit for yellow
- 203b The gate drive circuit for Magentas
- 203c The gate drive circuit for cyanogen
- 203d The gate drive circuit for black
- 204a Yellow signal generating circuit
- 204b Magenta signal generating circuit
- 204c Cyano signal generating circuit
- 204d Black signal generating circuit
- 205 Image-Information-Processing Equipment
- 300 One Chip Light-Emitting-Device Array Substrate
- 301 One Chip Light-Emitting-Device Array
- 302 Cutting Part Lose Contact
- 303 Glass Substrate
- 801 Substrate
- 802 810 Gate electrode
- 803 811 Gate insulator layer
- 804 812 Thin film semiconductor
- 805 813 Source electrode
- 806 814 Drain electrode
- 807 808 Couple electrode of the capacitor for charge storages
- 809 Insulator Layer
- 815 816 Couple electrode for light emitting devices
- 817 Luminous Layer

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[Translation done.]

Drawing selection [R pres ntative drawing] 



[Translation done.]

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**JAPANESE** [JP,11-198433,A]

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CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE  
INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

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[Translation done.]



\* NOTICES \*

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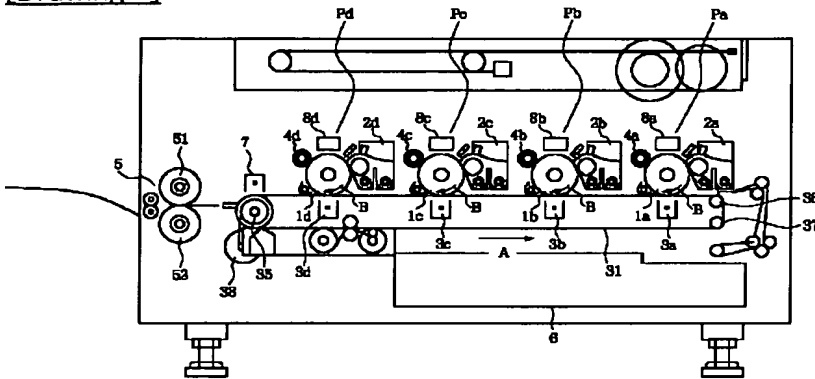
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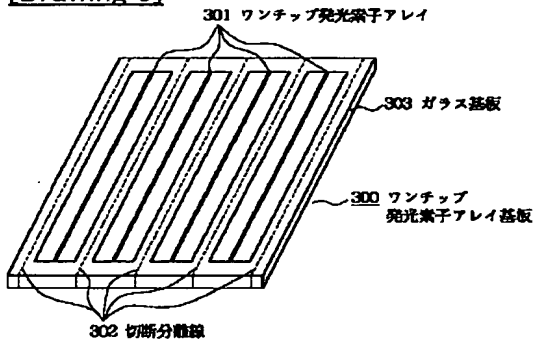
3.In the drawings, any words are not translated.

DRAWINGS

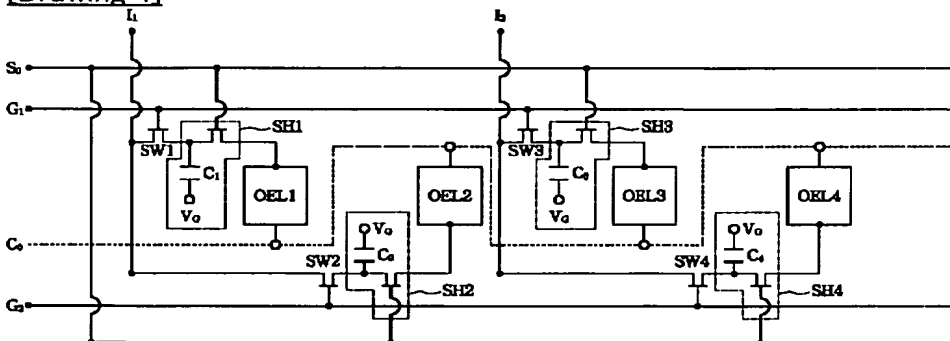
[Drawing 1]



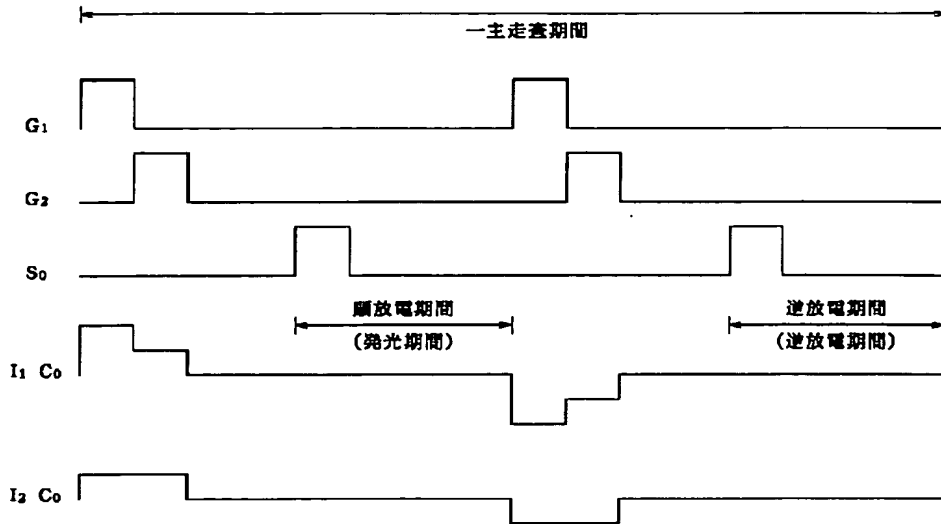
[Drawing 3]



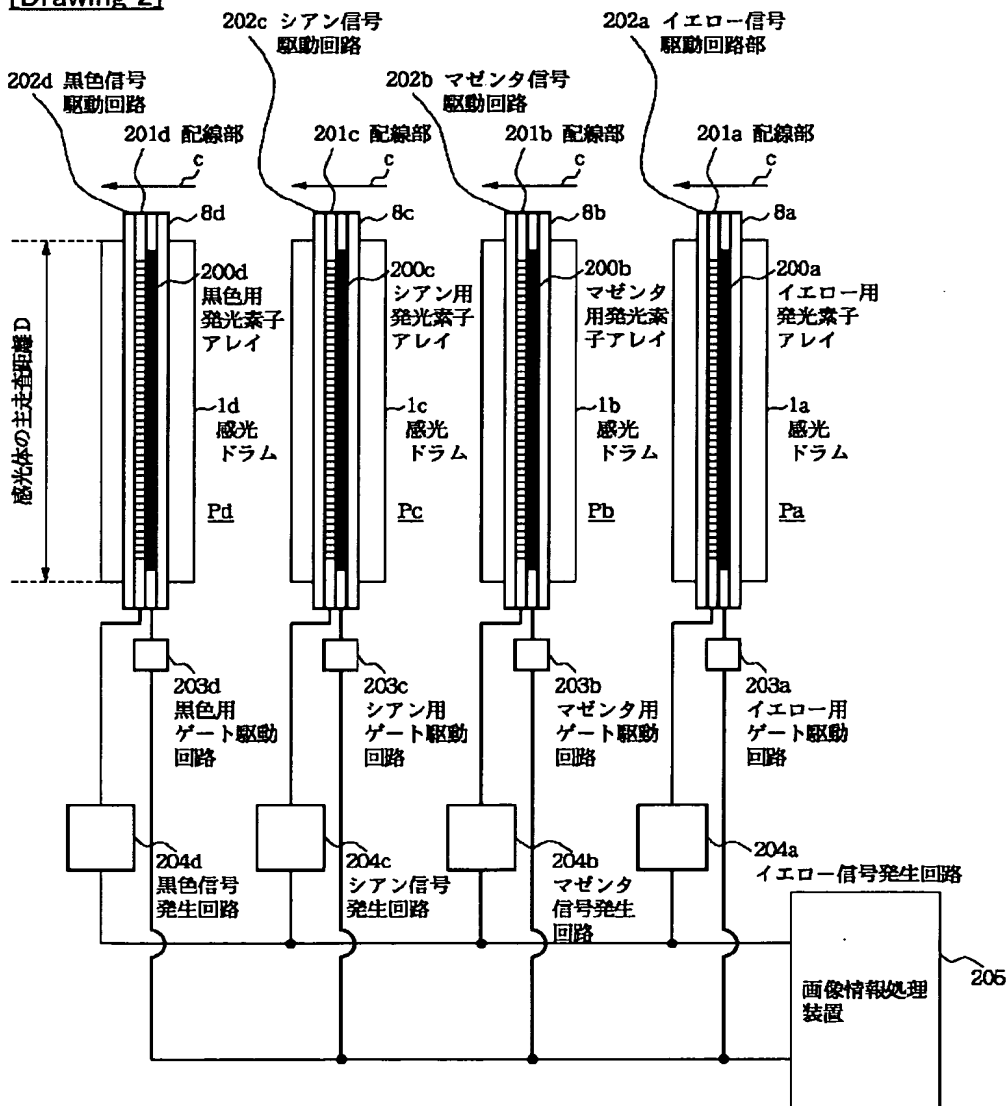
[Drawing 4]



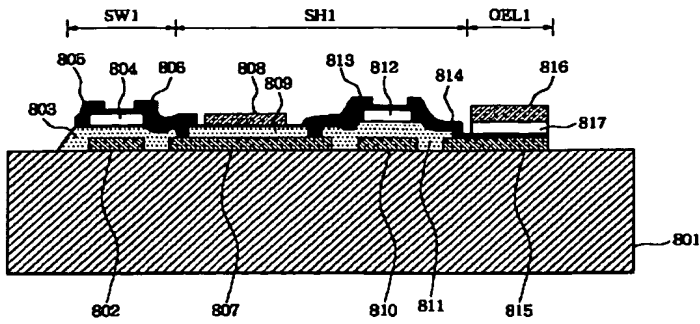
[Drawing 5]



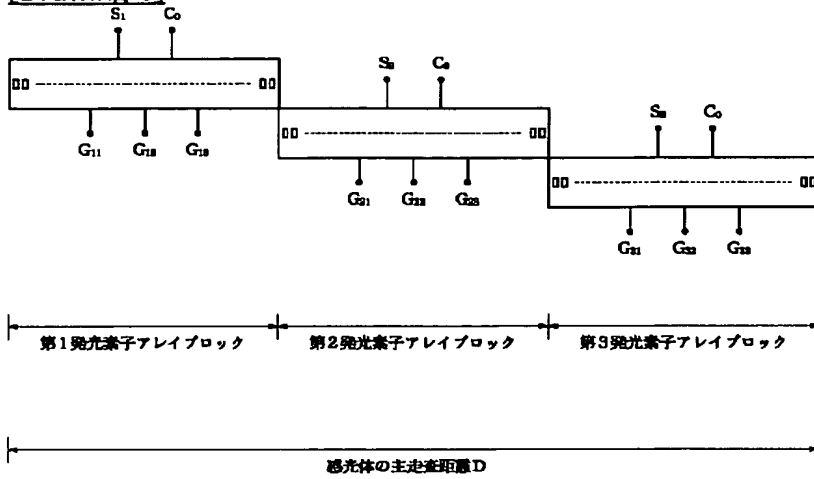
[Drawing 2]



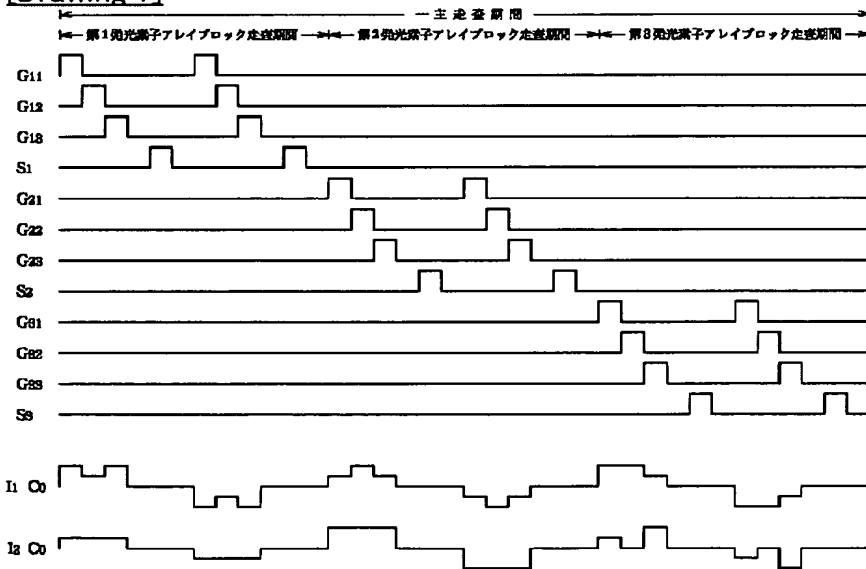
[Drawing 8]



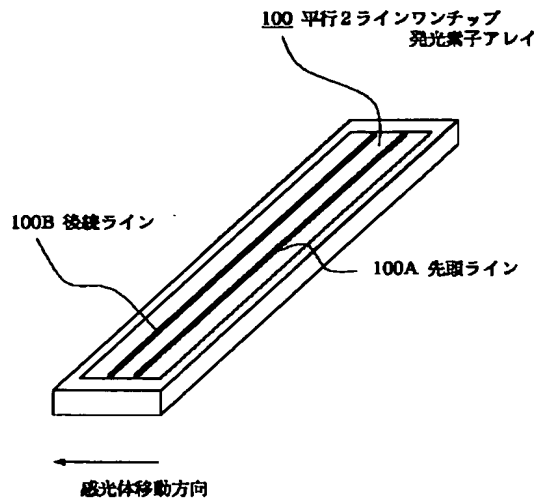
[Drawing 6]



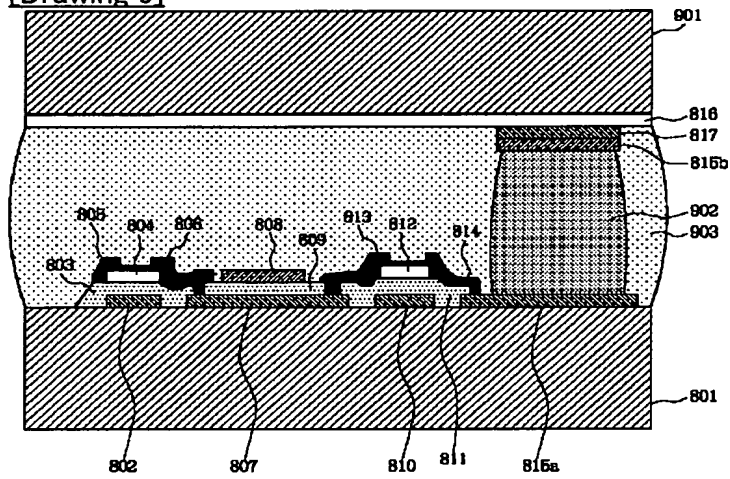
[Drawing 7]



[Drawing 10]



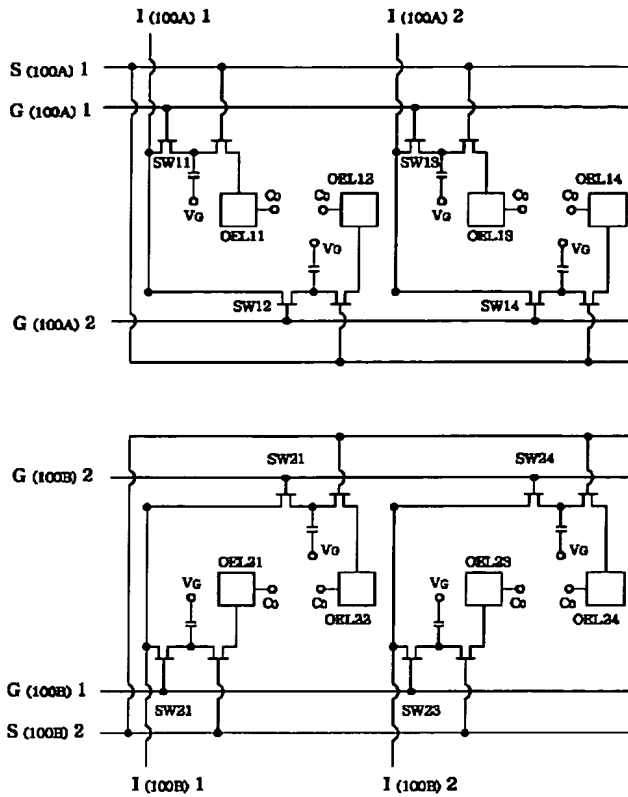
[Drawing 9]



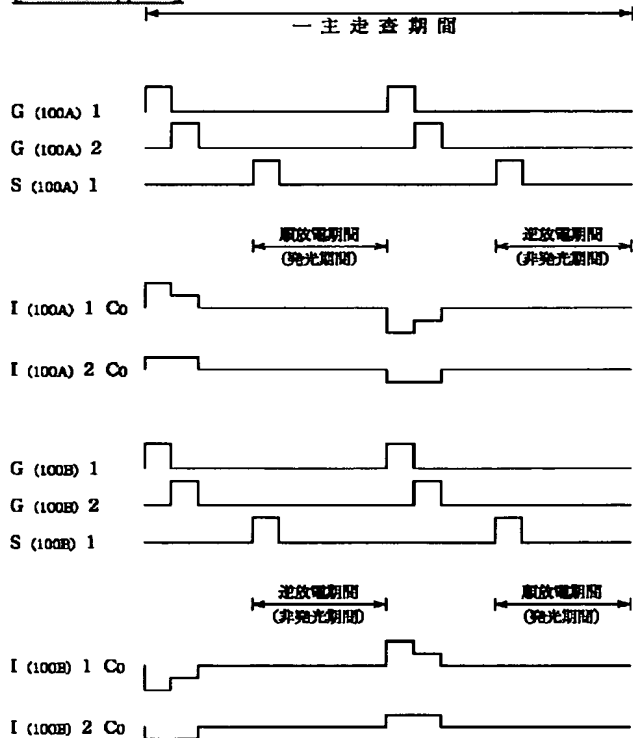
[Drawing 11]





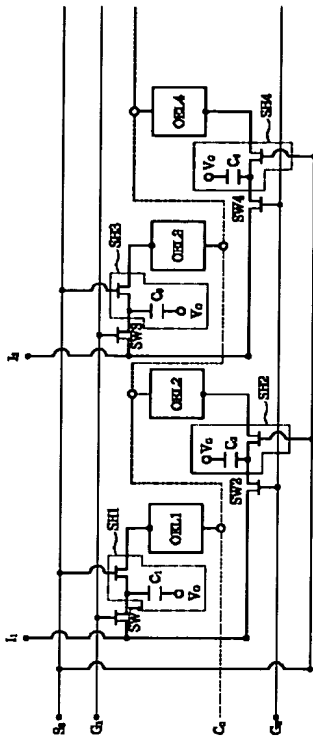


[Drawing 12]



[Translation done.]

Drawing selection [Repr sentativ drawing] 



[Translation done.]



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52

ツツキング葉子を模倣の群に区分し、該区分された模倣のスイッチング葉子の群組に、スイッチング葉子の第1組のスイッチング葉子に接続される1行目の第1配線線、第1端子を共通に接続されるスイッチング葉子の第2端子を共通に接続されるスイッチング葉子の第2配線線、及び模倣させる各行毎独立に配線した模倣の第2配線線、及び模倣光葉子アレイを同時に導光させる同時導光回路を有し、該模倣光葉子アレイからの同時導光によって、前記同時導光を導光する導光部を発生せしめる。

c. 複数行の第1配線群の内の少なくとも1行の第1配線群に第1回目の走査信号を印加し、複数群の第2配線群群の内の少なくとも1つの第2配線群に、第1回目の走査信号の走査時に同期させてヤバ信号の電圧信号を印加し、第2配線群に第1回目の走査信号を印加するように前記第1配線群と同期させてヤバ信号を放電するように前記第1配線群と同期させてヤバ信号を放電させ、前記少なくとも1つの第1配線群に第2回目の走査信号を印加し、前記少なくとも1つの第2配線群に第2回目の走査信号に同期させてヤバ信号の電圧信号を印加し、放電情報信号に基づくヤバ信号が同時に放電するように前記同時放電回路を動作させる第1の駆動手段、並びに

d. 該銀行の第1配電群内の他行の第1配電群に形成した回路を有する画像形成装置。前記第1回目の走査信号に、該第1回目の走査信号と同期させて他方の第1回目の走査信号を印加し、複数の第2配電群の内他の第2回目の走査信号を印加して、該電圧倍号に基づくキャパシタが同時に放電するように前に前記同時光回路を動作させ、前記他行の第1配電群に該第2回目の走査信号を印加すると同時に放電するように前に前記同時光回路を動作させる一方、該電圧倍号に基づきキャパシタが同時に放電するように前に前記同時光回路を動作させる第2の駆動手段を有する画像形成装置。

[請求項15] 前記同時光回路は、サンプル・ホールド回路を有している回路である請求項14記載の画像形成装置。

**[補求項16]** 一方に傾斜配置した導光素子を有する導光素子アレイ、該導光素子毎に接続させて配置した複数の導光素子アレイを複数の群に区分し、該複数の導光素子アレイを異なる群に区分した複数のスイッチング回路の群に共通に接続させる第1配線群、該スイッチング回路及び、該導光素子アレイから発せられる第2配線群と、スイッチング素子の第2端子をそれぞれ接続して、該導光素子アレイを同時に発光させる同時配線回路を有し、該導光素子アレイからの同時発光を実行させる導光手段、並びに

c. 前記第1配線群に第1回目の走査信号を印加し、第2配線群に前記第1回目の走査信号と同期させて一方極性の電圧印加を行なう。このとき、第1配線群に第1回目の走査信号が印加され、前記第2配線群に第2回目の走査信号を印加して、第2配線群に放電するように前記同時発光回路を動作させ、第2配線群に走査するよう第2回目の走査信号を印加し、第2配線群に第2回目の走査信号と同期させて他方極性の電圧印加を行なう。

放電するように前記同時発光回路を動作させる駆動手段を有する露光装置

【請求項 17】 前記発光素子は、有機発光素子を有する素子である請求項 16 に記載の発光装置。

【請求項18】 前記スイッチング素子は、両端子トランジスタであり、前記第1端子は、ゲート端子であり、そして前記第2端子は、ソース端子である請求項16記載の発光装置。

【請求項 19】 前記スイッチング素子アレイは、ワンチップ形成されている請求項 16 記載の発光装置。

【請求項 20】 前記同時発光回路は、サンプルホールド回路を有している回路である請求項 16 記載の発光装置。

【請求項21】 一方に接続配置した発光素子を含む発光素子アレイ、該発光素子に接続させて配置した複数のスイッチング素子を含むスイッチング素子アレイ、該スイッチング素子アレイを複数の群に区分し、該スイッチング素子アレイを複数の群に区分された複数のスイッチング素子の群毎に、スイッチング素子の第1端子を共通に接続させる第1配線群、該スイッチング素子に、スイッチング素子の第2端子を含む発光素子アレイ、該発光素子アレイを同時に接続させる第2配線群、及び該発光素子アレイを同時に接続させる同時発光回路を含む発光素子アレイブロックを複数備えた発光手段。

c. 1 発光素子アレイブロックを同時発光させ、複数の発光素子アレイブロックを各ブロック毎、順次動作させる第1駆動手段、並びに

2. 前記第1配線群に第1回目の送電信号を印加し、該電圧信号に基づきキャパシタが同時に放電するように前記同時発光回路を動作させる第2駆動手段

を有する発光装置。

【請求項23】 複数列及び複数行に配置した発光素子と有する発光素子アレイ、複数行の発光素子柱に接続させられた複数のスイッチング素子とを、これによって複数行に配置させたスイッチング素子アレイ、各行のスイッチング素子柱と複数の素子とを複数の群に区分し、該区分された複数のスイッチング素子の群毎に、スイッチング素子の第1端子を共通に接続させる第1配線柱、該スイッチング素子の第2端子と接続させる第2配線柱、及びスイッチング素子の第2端子を同時に発光とさせる同時発光回路を有し、該発光素子アレイからの発光状態とさせる発光手段、該発光素子アレイを同時に発光とさせる同時発光回路を有

並びに

c. 前記第1配線群に第1回目の走査信号を印加し、第2配線群に第2回目の走査信号を印加して一方極性の電圧信号と同期させて、前記電圧信号に基づきキャパシタが、同時に放電するように、前記電圧信号光回路を動作させ、前記第1配線群に第2回目の走査信号を印加し、第2配線群に第3回目の走査信号を印加して他方極性の電圧信号と同期させて、前記電圧信号光回路を動作させる駆動手段を有する発光装置。

【請求項24】 前記同時発光回路は、サンプルホールド回路を有している回路である請求項23記載の発光装置。

【請求項25】 模数列及び模数配置した発光素子と有する発光素子アレイ、模数行の発光素子柱に接続した模数のスイッチング素子を有し、1行毎に1行のスイッチング素子に対応させ、これによって、模数行に配置させたスイッチング素子アレイ、各行毎のスイッチング素子を模数の群に区分し、該区分した模数のスイッチング素子の群毎に、スイッチング素子の第1端子と共通に接続させる各行毎の第1配線、該各行毎のスイッチング素子柱に独立に接続した模数の第2端子と接続させる各行毎の第2配線、該各行毎のスイッチング素子アレイを同時に発光させる同時発光回路を有し、該発光素子アレイからの同時発光とさせる発光手段、

c. 複数行の第1配線群の内の少なくとも1行の第1配線群に第1回目の走査信号を印加し、複数第2配線群の内の少なくとも1つの第2配線群に、該第1回目の走査信号と同様に一方極性の電圧信号を印加し、該電圧信号に第2回目の走査信号を印加し、前記少なくとも1つの第2配線群に該第2回目の走査信号と同様に前記一方極性の電圧信号を印加し、前記少なくとも1つの第2配線群に該第2回目の走査信号と同様に動作させ、前記少なくとも1つの第1配線群に同時放光回路を動作させ、前記少なくとも1つの第1配線群に第2回目の走査信号を印加し、前記少なくとも1つの第2配線群に該第2回目の走査信号と同様に動作させ、該一方極性の電圧信号を印加し、該複数電圧信号に基づくキャパシタンスが同時に放電するように前に同時放光回路を動作させるように前に同時放光回路を動作させる第1の駆動手段、並びに

d. 豫執行の第1配線群の内地行の第1配線群に第1回目の走電信号を印加し、複数の第2配線群の内他の第2回目の走電信号に、該第1回目の走電信号に同期させて他方から強性の電圧信号を印加し、該電圧信号に基づきキャパシタが同時に放電するように前記同時発光回路を動作させて、前記他方の第1配線群に第2回目の走電信号を印加し、前記他の第2配線群に該第2回目の走電信号に同期させて一方極性の電圧信号を印加し、該電圧信号に基づきキャパシタが同時に放電するように前記同時発光回路を動作させる第2の駆動手段を有する発光装置。

【請求項26】 前記同時発光回路は、サンプルホールド回路を有している回路である請求項25記載の発光装置。

**【発明の詳細な説明】**

[0001]

【發明の属する技術分野】本発明は、電子写真複写機に用いられる画像形成装置及びこれに用いる感光装置に関し、特にならば画像形成装置を一例に配列し、各々の感光体を独立に用いることによって、各感光体毎に白版を形成して、シアアン、マゼンタ、イエロー及び黒色画像を形成し、これらの画像を合成することによってカラー画像を形成する画像形成装置に関する。

**[0002]**

【従来の技術】一般に用いられた４本の電子管互光感光体は、毎に、像管手段として、それぞれレーザ光源の照射をシアン、マゼンタ、イエロー及び黒色の各々の画像情報に基づいて制御させて、これによって、４本の電子管互光感光体毎にシアンのマゼンタ、イエロー及び黒色の静止画像を形成させる。これらの静止画像を合成して、これら４本の静止画像を合成することによって、カラー画像を形成するレーザ光平面画形成装置は、知られている。

【0003】また、前記画形成装置で用いられている光光源に代えて、シアン、マゼンタ、イエロー及び黒色の静止画像を形成させる光源として、４本のLED光平面画形成装置に配置したLED光源画形成装置も知られている。

【0004】前記レーザー光光源画像形成装置は、シフト、マゼンタ、イエロー及び黒色の各々の画像を一致させて合成させるため、4本の感光体毎に配置した4つのレーザ光光源毎に、各々のレーザ光の主起在方向及び偏振起在方向の両方を正確に一致させることは、難しいのが現状である。

【0005】一方、前記LED光源画像形成装置では、上記した主近方向及び前近方向の両方を一致させる要求は、比較的簡単に実現させることができるが、LEDチップが高価のものであるに加えて、複数のLEDチップを一列に繋ぎ合せてなる縦置き型LED素子とする必要があるため、さらに高価なものとなっていた。さらに、LEDチップは、チップ相互にその発光特性が相違しているため、感光体の移動に対する主近方向露光全域は、前記と同様の縦置き型LED素子によって露光させ、主近方向において、その露光条件よりチップの発光特性毎に相違し、この結果、主近方向の画像再現性を悪くさせていた。

【0006】また、カラー画像を形成できる電子写真機に、前記した第2型LED素子を複数の感光体毎に配置する必要があるが、この場合でも、複数の感光体毎に配置した複数の第2型LED素子間での感光特性が一致してしまい、感光体毎に配置した第2型LED素子間での感光特性を調整する難い要求が新たに発生していた。

【0007】



【0010】本発明の好ましい第1の態様例では、前記

【0011】本邦の明瞭な第2の例は、前記

【0012】本発明の好ましい第4の態様例では、前記スイッチング素子は、降圧トランジスタであり、前記第1端子は、ゲート端子であり、そして前記第2端子は、ソース端子である。

【0013】本発明の好ましい第5の態様例では、前記  
スウィッチング素子アレイは、ワンチップ成形されてい  
る。

[0014]

【発明の実施の形態】本発明の具体例を図面に従って説明する。図1は、本発明の発光装置を露光装置として用いた画像形成装置、特にカラー電子写真複写機の断面図である。

【0016】図面に示すカララ一落写機では、用紙等の被プリント材は、カセット6に収載されており、画像形成（以下、プリントという）の動作に伴ってカセット6から送送部に向けて被プリント材を駆動部へ給紙される。送送部31は駆動部35と2本の送動ローラ36及び37との間に収載されて送送部を形成し、ここで、駆動ローラ36がモータ38によって回転駆動されることにより、送送部31はローラ35とローラ36及び37との間を往復走行することができる。なお、その走行する方向は、図面を参照して矢印Aに示す方向である。

【0016】搬送ベクトル31の延在する方向に沿って4  
単位の画像形成ユニットPa、Pb、Pc及びPdが設  
けられる。これら画像形成ユニットPa、Pb、Pc及び  
Pdは、それぞれ同様の構成を有するものであり、以  
て、第1色目の画像形成ユニットPaを例にとりその構  
成を概略的に説明する。

【0017】画像形成ユニットPaにおいて、搬送ペー  
 3に近接して矢印B方向に回転する円筒状の感光  
 体、すなわち感光ドラム1aが回転される。感光ドラム  
 1aの回転に伴い、その感光感光層は、接触帯電器で  
 構成した一次帯電器4aによって一様に帯電される。そ  
 の後、この帯電感光層に、感光ドラムの主軸を全城を露  
 光する抑えリッチングレンズアレイを用いた露光手段  
 8aから発光する光によって、原稿像が形成される。こ  
 の露光された、イエロー成分静電像が形成される。光  
 の増像が形成された部分は順次その回転により移動して  
 イエロー現像器2aの位置に至り、その位置でイエロー  
 現像器2aから供給されるイエロートナーにより現像さ  
 れて可視化される。

【0018】イエロートナート像は、感光ドラム1aの回転により、このドラム1aとは搬送ベルト31を介して設けられるコロナ帯電器3aを有した転写部位に至る。これにタイミングを合わせて被プリント材が、搬送ベ

ト 3 1 により転写部位に搬送される。次に、コロネ電器 3 a に転写バイアスが印加されることにより、感光ドラム 1 a 上のイエロートナー像は、感光ドラム 1 a の回転に伴って被プリンタ材上に転写されて行く。

【0019】その後、感光ドラム1aの回転に伴い、その上に残留するトナーは、クリーニング装置（図示せず）により除去され、次の画像形成工程に入り得る状態になる。一方、イエロートナー像が転写された被プリンタ材は、搬送ベルト3.1により第2色目の画像形成用イエローインクを供給するインク供給部2.2に搬送される。

【0202】第2色の画像形成ユニットPbは、上述した第1色の画像形成ユニットPaと同様な構成であり、上記と同様にして、ワンタッチ転写装置アレイを用いた露光手段8から露光によって、原稿画像のマゼンタ成分の光像が露光され、マゼンタ成分の静電潜像が形成され、マゼンタトナーによる現象が行われ、得られたマゼンタトナー像が転写部で被プリント材上に第1色のイエロートナーの転写と重ね合わせて転写される。同様に、被プリント材の搬送に伴って、画像形成ユニットPc及びPdでの各ワンタッチ転写装置アレイを用いた露光手段8c及び8dによる露光によって、それぞれシアン成分静電潜像及び青色成分静電潜像が形成し、それぞれ工程において、被プリント材上に4色のトナー像が重ねて転写され、被プリント材上に4色のトナー像を重ね合わせたカラー画像が形成される。

【0021】上記第2色目、第3色目及び第4色目の画像形成ユニットPb、Pc及びPdでは、第1色目の画像形成ユニットPaと同様に、それぞれ、感光ドラム1b、1c及び1d、マゼンタ現像器2b、シア現像器2c及び黒現像器2d、コロナ帯電器3b、3c及び3d、並びに、接点帯電器で構成した一次帯電器4b、4c及び4dが用いられている。

【0202】画像形成ユニットPa、Pb、Pc及びP  
dの動作を終了すると、4色のトナー像が転写され、  
被プリント材は、さらに搬送され、分離電極7で除電  
された後、搬送ベルト3から分離され、一枚の定着  
ローラ51及び加圧ローラ52を備えた定着装置5に送  
られる。ここでは通常、所定温度に加熱されているロー  
ラ51及び加圧ローラ52の定着が行われる。その後、被プリント  
材は、複写機の機外へ排出される。

【0023】図2は、図1に図示する画像形成ユニットPa、Pb、Pc及びPdの詳細を図示するブロック図である。

【0024】画像形成ユニットPa、Pb、Pc及びPdは、それぞれ、感光ドラム1a、1b、1c及び1d

50 に対応させて配置した露光手段 8 a, 8 b, 8 c 及び 8 d には、イエロー用露光素子アレイ 200 a, マゼンダ用露光素子アレイ 200 b, シアン用露光素子アレイ 200 c 及び黒色用露光素子アレイ 200 d が装着されて

アレイ200a、シアン用発光素子アレイ200b、シアン用発光素子アレイ200c及び黒色用発光素子アレイ200dは、それぞれ異なる波長の光を放射する。これらにより、高密度の引き出し層からなる配線部201a、201b、201c、及び201dを通して、イエロー用発光素子アレイ202a、マゼンタ用発光素子アレイ202b、シアン用発光素子アレイ202c及び黒色用発光素子アレイ202dに接続され、各色の光がそれぞれの駆動回路による動作によって、各素子には、発生された非発光のいづれか一方に制御される。イエロー用発光素子アレイ202a、マゼンタ用発光素子アレイ202b、シアン用発光素子アレイ202c及び黒色用発光素子アレイ202dからの画像信号に応じて、発光素子アレイの発光動作を制御することが出光管に設定されている。上記の動作を説明するために、図6に示すように、シアン用発光素子アレイ200b、シアン用発光素子アレイ200c及び黒色用発光素子アレイ200dで用いた発光素子は、例えば1200dpiの高解像度で一列に配列させたアレイ（配列体）を形成している。

【0025】また、イエロー用発光素子アレバ200c、マゼンタ用発光素子アレバ200b、シアング用発光素子アレバ200c及び黒色用発光素子アレバ200dの各色の発光素子アレバ200c及び黒色用発光素子アレバ200dには、下記システム用回路及びサンプリングボードの回路が設けられており、これらの回路中のゲート線のそれぞれが駆動動作のタイミングは、イエロー用ゲート駆動用シアングポートマゼンタ用ゲートマゼンタ用ゲート駆動用シアングポートマゼンタ用ゲート黒色用ゲート駆動用回路203dによって、制御されている。そして、かかるゲート駆動動作の制御、並びにイエロー、マゼンタ、シアング及び黒色信号の画像信号の暗黒は、CPU（図示せず）内の画像情報処理装置205によって、実行される。

【0026】本発明で用いたイエロー用発光素子アレイ200a、マゼンタ用発光素子アレイ200b、シアングreen用発光素子アレイ200c及び黒色用発光素子アレイ200dは、感光ドラム1a、1b、1c及び1dの回転移動に対する主走査方向における主走査距離の全域を覆って配置したワンチップ発光素子アレイが用いられている。これらの発光素子アレイ200a、200b、200c及び200dは、例えば、600dpi以上のよりなる解像度である1200dpi解像度、又は、それ以上の解像度で配列した複数の発光素子が像素の主走査距離の全域をカバーするワンチップに配置されている。

【0027】本発明の好ましい具体例では、上記エイロ  
用発光素子アレイ200a、マゼンタ用発光素子アレ  
イ200b、シアン用発光素子アレイ200c及び黒色  
用発光素子アレイ200dで用いた上記ワンチップ発光  
素子アレイは、下述する単一基板から作成し、それぞれ  
4本に切断分離して得たものを使用する。

[0028] また、図中の矢印Ｃは、回転移動する感光ドラムの周走方向を示し、感光層１ａ、１ｂ、１ｃ及び１ｄの順に周走方向へ向かって、直径６０ｃｍ、３０ｃｍ、２０ｃｍ、１５ｃｍのアルミニウム管が用いられ、また同一管径の透明な感光層（例えば、Ａ－Ｓ・感光層）が使われ、使った後は、駆動機構から取り出され、廃棄される。またこのように同一管径の感光層を用いることにより、感光層の移動速度は、各々同一に設定して、駆動機構から取り出され、廃棄される。

[0029] 図３は、上記したイエロー-用発光素子アレレイ２００ａ、マゼンタ用発光素子アレレイ２００ｂ、シアングリーン用発光素子アレレイ２００ｃ及び黒色用発光素子アレレイ２００ｄで用いたワンチップ発光素子アレレイ３０１を数個並べてみた一例である。図４は、図３と同様に、赤色用発光素子アレレイ３０２と青色用発光素子アレレイ３０３とを数個並べてみた一例である。図５は、図３と同様に、緑色用発光素子アレレイ３０４と白色用発光素子アレレイ３０５とを数個並べてみた一例である。図６は、図３と同様に、黄色用発光素子アレレイ３０６と紫

【0030】本発明で用いるガラス基板303の大きさ  
には、発光素子アレイをワンチップで形成できる大きさ  
であれば、特に制限がない。

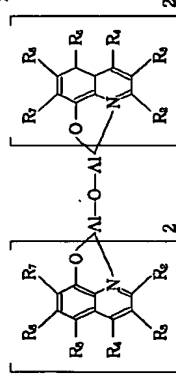
【0031】図4は、図3に示すワンチップ発光素子アレイ301柱の等価回路を図示する。発光素子OEL1、OEL2、OEL3、OEL4…は、電子方向に移動回転方向を向いた時、感光ドラムの移動回転方向に一致して発生する左方向に付て、一列に、積層された、7セグメントマトリクス回路に接続される、このアクティブマトリクス回路では、スイッチング素子SW1、SW2、SW3、SW4…として、開閉トランジスタを、スイッチング回路では、スイッチング素子OEL1、OEL2(N-1)と区別されたと、奇数番目の発光素子OEL1、OEL3、OEL5…と偶数番目の発光素子OEL2、OEL4、OEL6…(Nの群)は、奇数番目のスイッチング素子

光電子SW1、SW3、…・SW(2N-1)の各ゲート端子にゲート線G1を通じて共通に接続され、偶数番号の発光素子OEL2、OEL4、…・LEL(2N)の発光素子とオセルト端子を有する第2の群は、偶数番号の発光素子OEL2、OEL4、…・LEL(2N)の各ゲート端子にゲート線G2を通じて共通に接続される。上記「N」は、1、2、3、4、5・・・の数である。そして、このクティブマトリクス回路において、隣り合う発光素子OEL1-OEL2、OEL3-OEL4、…・OEL(2N-1)-OEL(2N)毎を隣り合うスライディング接点SW1-SW2、SW3-SW4、…・SW(2N-1)-SW(2N)の導電性層に、各ソース線 $I_1$ ,  $I_2$ ・・・を通して、共通に接続する。また、発光素子OEL1、OEL2、OEL3、OEL4・・・の対応は、コンダクタC0kに共通に接続され、それぞれの発光素子OEL1、OEL2、OEL3、OEL4・・・のアノードまたはカソードとすることができる。

【0032】本発明の好ましい例では、スイッチング素子SW1、SW2、SW3、SW4・・・と発光素子OEL1、OEL2、OEL3、OEL4・・・との間に



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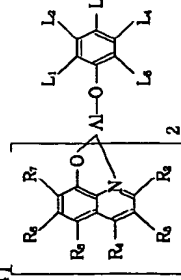


19

ここでR<sub>2</sub> - R<sub>7</sub>は置き換え可能性を有す。他の好ましい実施例では金属オキシノイド化合物は以下の式を有する:

[0050]

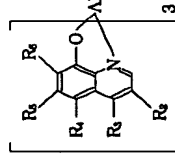
[外4]



ここでR<sub>2</sub> - R<sub>7</sub>は上記で定義されたものであり、L1 - L5は集中的に12又はより少ない炭素原子を含み、それぞれ別々に1から12の炭素原子の水素又は炭水化物鎖を有し、L1、L2は共に、又はL2、L3は共に選定されたベンジレン環を形成しうる。他の好ましい実施例では金属オキシノイド化合物は以下の式である。

[0051]

[外5]



ここでR<sub>2</sub> - R<sub>6</sub>は水素又は他の置き換え可能性を有す。上記例は単にエレクトロルミネセンス層内で用いられるある好ましい有機材料を有するのみである。それらは本発明の垣限を制限することを意図するものではなく、これは一般に有機エレクトロルミネセンス層を指示するものである。上記例からわかるように有機EL材料は有機リガンドを有する配位化合物を含む。

[0052] 本発明の発光素子で用いるセグメント電極403としては、アルミニウム、銀、亜鉛、金、クロムなどの反活性金属を用いることが出来、また対向電極402としては、インジウム・ティン・オキサイド、酸化銅などの透明導電膜を用いることが出来る。

[0053] 本発明で用いる封止材405としては、酸化シリコン、窒化シリコンなどの無機絶縁物質やエポキ

シなどの有機絶縁樹脂によって封止される。また、本発明で用いる図面404としては、酸化シリコン、窒化シリコンなどの無機絶縁物質やエポキシなどの有機絶縁樹脂による絶縁材料を用いることが出来る。

[0054] 本発明の画像形成装置では、感光体1a、1b、1c及び1dの感光層として、ベンゾ・オキサゾール系感光物質、ベンゾ・チアゾール系感光物質、トリフェニルアミン系感光物質などの有機光導電物質または、アモルファス・シリコン (a-Si) 感光物質、アモルファス・シリコン・ゲルマニウム合金 (a-SiGe) 感光物質、アモルファス・シリコン・カーボン合金 (a-SiC) 感光物質などの無機光導電物質を用いることが出来る。

[0055] このようによりして作成した素子上に窒化シリコンをスパッタ法にて150nm成膜して、封止のため保護層を形成した。なお、有機層成膜から保護層形成までは、同一真空系内での成膜を行なった。

[0056] 有機LEDの誘導材料としては仕事関数が大きなものが望ましく、本実施例で用いたITOのほかたとえば酸化銅、金、白金、パラジウム、セレン、イリジウム、ヨウ化銅などを用いることができる。

[0057] 一方、陰極材料としては仕事関数が小さなものが望ましく、本実施例で用いたMg/Agのほかには、たとえばMg、Al、Li、Inあるいはこれらの合金等を用いることができる。

[0058] 正孔輸送層に関しては、TPDのほかに下記に表されるホール輸送性化合物を用いることができる。

[0059] また、有機材料だけでなく、無機材料を用いてもよい。用いられる無機材料としては、a-Si、a-SiCなどがあげられる。

[0060] 電子輸送層としては、Alq<sub>3</sub>のほかには下記に表される電子輸送性化合物を用いることができる。

[0061] また、下記10に示されているようなトランプント色素を電子輸送層、あるいは正孔輸送層にドーピングすることもできる。

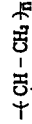
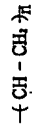
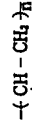
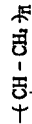
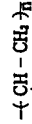
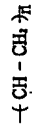
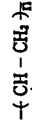
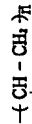
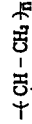
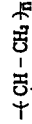
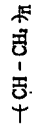
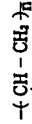
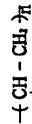
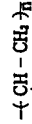
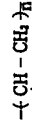
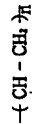
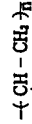
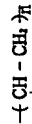
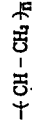
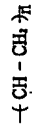
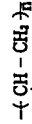
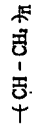
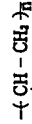
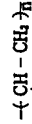
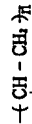
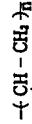
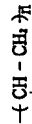
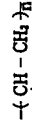
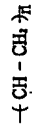
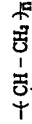
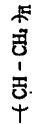
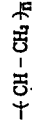
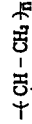
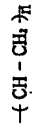
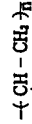
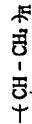
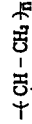
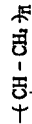
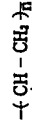
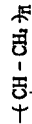
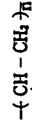
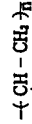
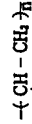
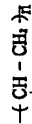
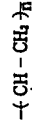
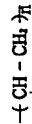
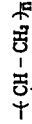
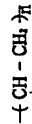
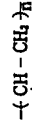
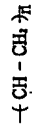
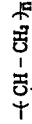
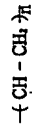
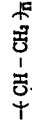
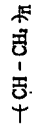
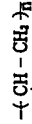
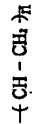
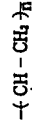
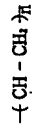
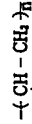
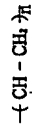
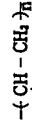
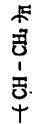
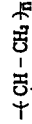
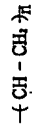
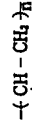
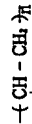
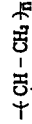
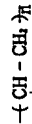
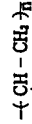
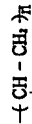
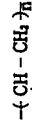
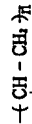
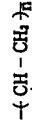
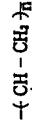
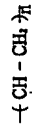
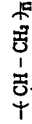
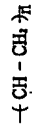
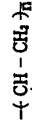
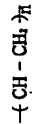
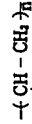
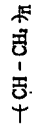
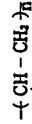
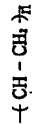
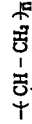
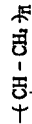
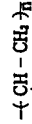
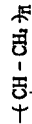
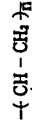
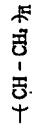
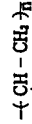
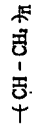
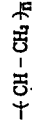
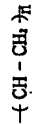
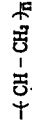
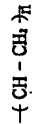
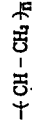
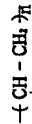
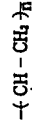
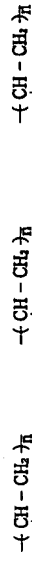
[0062] 有機LEDの材料は、使用する感光ドラムと感度のあったスペクトル発光するものを選択することが望ましい。

[0063]

[外6]

21

ホール輸送体

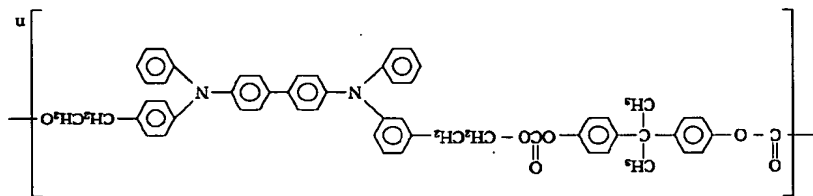


(14)

[0066]  
[外9]

25

ホーホ輸送性化合物



10

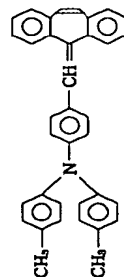
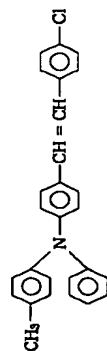
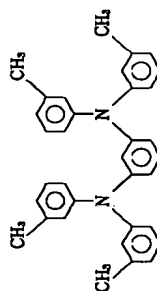
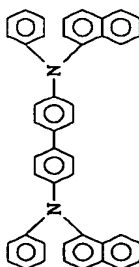
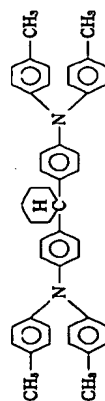
20

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(13)

ホーホ輸送性化合物

23

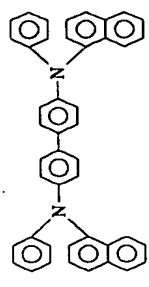


[0065]  
[外8]

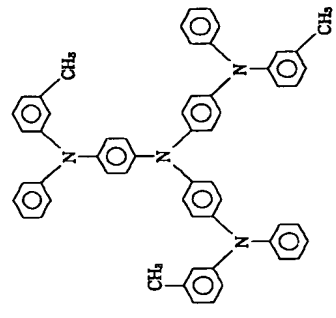


(16)  
[0068]  
[外11]

29  
ホーノ輸送性化合物

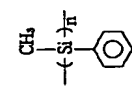
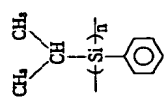
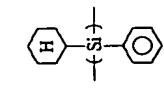
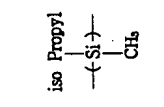
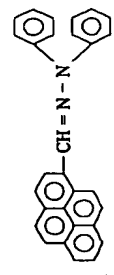
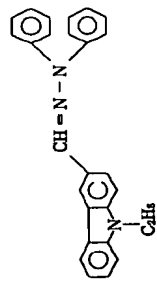
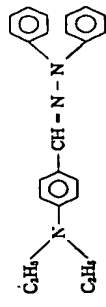


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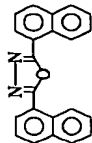
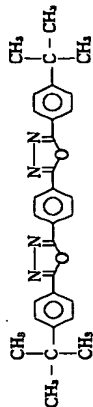
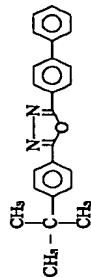
(15)  
ホーノ輸送性化合物



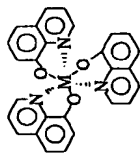
[0067]  
[外10]

27

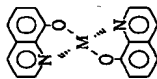
電子輸送性化合物



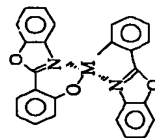
電子輸送性化合物



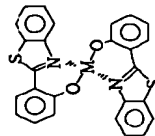
M: Al, Ga



M: Zn, Mg, Be



M: Zn, Mg, Be



M: Zn, Mg, Be

[0069]

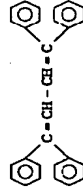
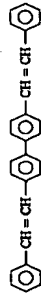
[外12]

[0070]  
[外13]

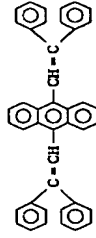
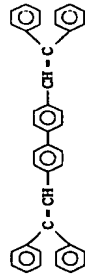
[0071]

[外14]

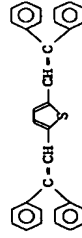
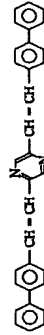
電子輸送性化合物



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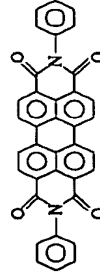
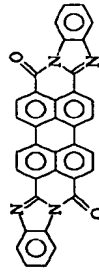
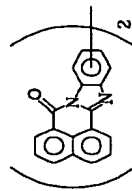
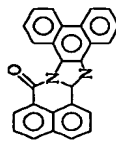


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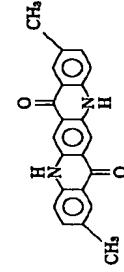
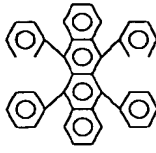
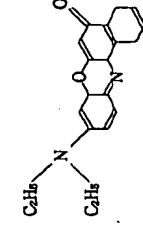
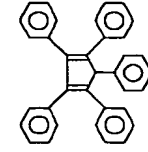
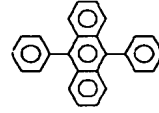
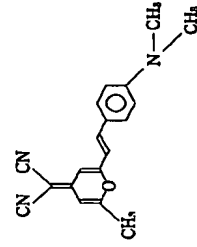
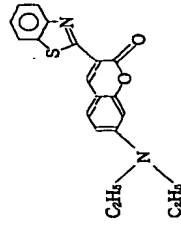
[0072]

[外15]

電子輸送性化合物



F-バント色素



[0073] 図9は、本発明の別の好ましい態様の発光素子である。下方の基板801の上には、図8で用いたスイッチング素子SW1とサンプルホール回路部S H1と同様のものが設けられ、上方の基板901（ガラス等の絶縁性基板）の上に1ピットの発光部を形成する。そのため、1ピットの発光部を形成する。基板801、901は、内側に向けて対向配置し、基板801上の電極815aと基板901上の電極815bとが導電性接着力（接着力電気接合体）902によって電気的に接続されている。

[0074] 接着力電気接合体902は、エポキシ系又はフェノール系熱硬化接着力中にカーボン粒子、銀粒子や銅粒子の様な導電性粒子が分散含有された導電性接

剤を用い、これをスクリーン印刷法、オフセット印刷法又はディズベンサンー塗布法などの採用によって、上基板901または下基板801、あるいはその両方の所定位置に塗布し、乾燥させることによって得られる。

[0075] 上述の導電性接着力中には、界面接着力を増強するために、N-(2-アミノエチル)-3-アミノプロピルメチルジメチルシラン、N-(2-アミノエチル)-3-アミノプロピルトリメチルシラン、3-アミノプロピルトリメチルシラン、3-グリニドキシプロピルトリメチルシランなどのシランカップリング剤を含

有させることができる。

[0076] 接着力電気接合体902の他の例として、ハンダなどが挙げられる。

【0077】 上述の接着性電気絶縁体902の外周部には、接着性電気絶縁体903が設けられる。接着性電気絶縁体903は、エポキシ系又はフェノール系絶縁接着力を上基板901または下基板801、あるいはその両方の所定位置に、オフセット印刷法、スクリーン印刷法、又はディスペンサー塗布法などの方法によって、塗布し、乾燥させることによって得られる。この際、絶縁接着力及び導電性接着力の塗布に当って、上基板901または下基板801の一方の基板に対して絶縁接着力を設けた、この絶縁接着力を設けていない方の基板に対して導電性接着力を設ける配分方法を用いるのが好適である。

【0078】 また、本発明では、上述の接着性電気絶縁体903に代えて、接着力を有していない絶縁体、例えば樹脂樹脂、特に高沸点樹脂溶媒やネマチック液晶、コレステリック液晶、スメクチック液晶の様な液体などの液体絶縁体を用いることもできる。

【0079】また、上述の接着性電気絶縁体903または非接着性電気絶縁体には、遮光化を併せ持つ様に、着色顔料や塗料などの着色体を含有させることもできる。

【0080】図10は、本発明の別の好ましい具体例である。図10に図示する発光装置は、感光ドラムなどがある。感光体の移動方向に対して、先頭ライン100Aと後続ライン100Bとに位置する平行なワンチップ発光素子アレイを設けた平行2ライン・ワンチップ発光素子アレイ100を備えている。この平行2ライン・ワンチップ発光素子アレイ100の動作によって、ラインの書き込みを実行するようになっている。

[0082] 先頭ライン100Aと後続ライン100Bのワンチップ発光素子アレに備えられている先頭ライン100Aの発光素子OEL11、OEL12、OEL13、OEL14・・・及び後続ライン100Bの発光素子OEL21、OEL22、OEL23、OEL24・・・は、電子互換性線に接続された時、感光ドラムの移動回転方向に対する主走査方向になって、2平行的に、それぞれ順次配置され、アクティブマトリクス回路に接続される。このアクティブマトリクス回路では、スイッチング素子SW1、SW2、SW3、SW4・・・として、類似トランジスタを用いるのが適しており、奇数番目の発光素子OEL11、OEL13、・・・OEL1(2N-1)として区分された発光素子群(第1の列)は、奇数番目のスイッチング素子SW1、SW3、・・・SW1(2N-1)の各ゲート端子にゲート線G(100n)を通して共通に接続され、偶数番目の発光素子OEL12、OEL14、・・・OEL2、OEL4、・・・OEL2(2N)の各ゲート端子にゲート線G(100m)を通して共通に接続され、偶数番目のスイッチング素子SW2、SW4、・・・SW2(2N)の各ゲート端子にゲート線G(100o)を通して共通に接続される。

1 (2N) として区分された発光素子群 (第2の群) は、個番目のスイッチング素子 SW1.2、SW1.4、  
 ... SW1 (2N) の各ゲート端子にゲート線 G<sub>1</sub> (100A) を通して共通に接続される。そして、このアクティブマトリクス回路において、隣り合う発光素子 OE1.1-OE1.2、OE1.3-OE1.4、... OE1.1-OE1.2 (2N-1)-OE1.1 (2N) 毎を隣り合うスイッチング素子 SW1.1-SW1.2、SW1.3-SW1.4、... SW1 (2N-1)-SW1 (2N) 毎のゾナー端子に、各ゾナー線 L<sub>1</sub> (100A) 1、L<sub>1</sub> (100A) 2、... を通して共通に接続する。また、発光素子 OE1.1、OE1.2、OE1.3、OE1.4、... の対極は、共通線 C<sub>0</sub> に接続され、それぞれの発光素子 OE1.1、OE1.2、OE1.3、OE1.4、... のアノードまたはカソードとすることができ、さらに、スイッチング素子 SW1.1、SW1.2、SW1.3、SW1.4、... と発光素子 OE1.1、OE1.2、OE1.3、OE1.4、... との間に、図3の素子と同様のサンプルホール回路を接続する。このサンプルホール回路は、それぞれ電荷蓄積用キャパシタを備えており、奇数列の電荷蓄積用キャパシタは、ゲート共通接続線 S (100A) に接続し、偶数列の電荷蓄積用キャパシタは、ゲート共通接続線 S (100A) 2 に接続され、奇数ドラムの回路動作に同期させて、所定のゲート時間またはサンプルホール用ノード用ノードのゲート動作によってオン・オフを切り替えられる。

【0083】 先頭ライン100Aと平行配置の保持タイプ100Bの発光素子OEL21、OEL22、OEL23、OEL24・・・に接続するアクティブマトリクス回路20で、例えば、奇数番目の発光素子OEL21、OEL23、・・・OEL2(2N-1)として区別された発光素子群(第1の群)は、奇数番目のスイッチング素子SW21、SW23、・・・SW2(2N-1)の各々が、端子にゲート線G(100B)を通して共に接続される。偶数番目の発光素子OEL22、OEL24、・・・OEL2(2N)として区別された発光素子群(第2の群)は、偶数番目のスイッチング素子SW22、SW24、・・・SW2(2N)の各々が、端子にゲート線G(100A)を通して共に接続される。そして、この発光素子20を、通して、共通に接続される。そして、この

[illegible]

さらに、同様に、スイッチング素子SW21、SW22、SW23、SW24・・・と発光素子OEL21、OEL22、OEL23、OEL24・・・には、サンプリングボルト回路を接続され、それぞれ電圧増幅用キヤパシタを備えており、奇数列の電圧増幅用キヤパシタは、それぞれゲートを共通接続線S(100B)1に接続し、偶数列の電圧増幅用キヤパシタは、それぞれゲートを共通接続線S(100B)2に接続される。

[0084] 上記する導光装置では、先頭ライン100Aに配置した発光素子と後続ライン100Bに配置した導光増光素子と、感光体の偏斜方向に対して平行、すなわち感光ドラムの副走査方向に対して平行に配置するのが好ましい。

【0085】図12は、図10及び図11に図示する素子の駆動動作における駆動シーケンスである。図12に示す駆動シーケンスにおいては、先頭ライン100Aの珠光素子アレイの駆動中は、隣接珠光素子の駆動にはソース線100A1、2、...とソース線100B1、2、...に印加する印加電圧は、互いに、 $C_0$ を基準として、逆極性とし、特に、電圧平均値がゼロになるように設定するのが良い。

【発明の効果】本発明によれば、前掲の「発明の解決すべき課題」を解決したこと、具体的には、従来の発光型LEDに代えて本発明による新規なワンチップ発光素子アレイを用いたことによって、画像形成装置の発光素子アレイにおけるコストを低減させ、主として方向におけるカラー再現性を向上させることが出来、さらに、各発光体毎に配置した4本の単一チップ発光素子アレイが単一基板から取られたものであるため、各単一チップ発光素子アレイの発光特性がほぼ等しいので、各素子アレイ間の特性補償を省略することが出来たので、この分におけるコストを大幅に低減させた。

【0087】さらに、本発明によれば、緑光素子の発光  
真度を大幅に増強させ、これによって、電子写真複写機  
のプロセススピードを大幅に向上させ、同時に、プリン  
タヘッド内のドライバ・IC数及び配線数を大幅に低減  
でき、これによって、低コストのカラータン電子写真複写機  
を實現できた。

【図面の簡単な説明】  
 【図1】本発明の画像形成装置の断面図である。  
 【図2】本発明の画像形成装置で用いた露光部のプロンク図である。  
 【図3】本発明で用いた単一基板上のランチップ発光素子アレイの斜視図である。  
 【図4】図3で用いた発光素子アレイの等価回路図である。  
 【図5】図4で用いた発光素子アレイの駆動シーケンス図である。

【図6】本発明の別の発光素子アレイのブロック図である。

る。【図 7】図 6 に図示する昇光粒子アレイの駆  
ス図である。【図 8】本装置で用いた昇光粒子の断面図で  
【図 9】本装置で用いた別の昇光粒子部の断  
る。【図 10】本装置で用いた別のワンチップ環  
イの断面図である。【図 11】図 10 で用いた昇光粒子アレイの  
である。

【図12】図11で用いた発光素子アレイの  
ンス図である。

【符号の説明】

- 1 a、1 b、1 c、1 d 感光ドラム
- 2 a、2 b、2 c、2 d 現像器
- 3 a、3 b、3 c、3 d コロナ荷電器
- 4 a、4 b、4 c、4 d 接触荷電器
- 5 定着装置
- 6 カセット
- 7 分幅線電器
- 8 a、8 b、8 c、8 d 露光手段

Pa, Pb, Pc, Pd 画像形成ユニット

31 搬送ベルト

35 駆動ローラ

36 従動ローラ

38 モータ

51 定着ローラ

52 加圧ローラ

200a イエロー用発光素子アレイ  
200b マゼンタ用発光素子アレイ  
200c シアン用発光素子アレイ  
200d 黒色用発光素子アレイ  
201a～d 引き出し配線部

202 a エエロー信号駆動部  
202 b マゼンタ信号駆動部  
202 c シアン信号駆動部  
202 d 黒色信号駆動部  
203 a エエロー用ゲート駆動回路  
203 b マゼンタ用ゲート駆動回路

- 203c シア・用ゲート駆動回路
- 203d 黒色用ゲート駆動回路
- 204a イエロー信号発生回路
- 204b マゼンタ信号発生回路
- 204c シアン信号発生回路
- 204d 黒色信号発生回路
- 205 画像情報処理装置
- 300 ワンチャネル青光電子アレイ基板
- 301 ワンチャネル青光電子アレイ
- 302 切刃分離線

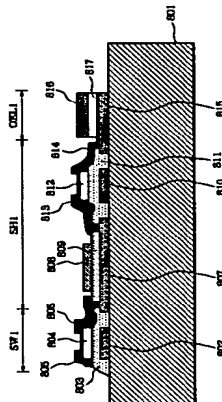
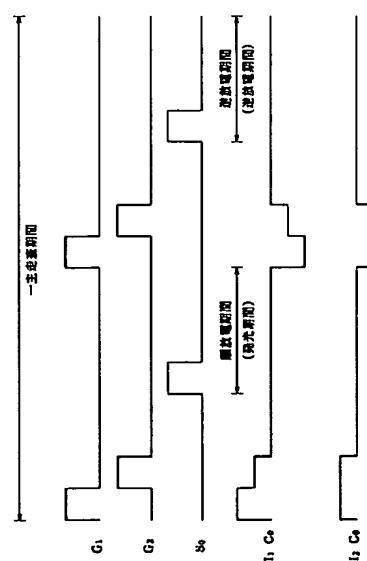
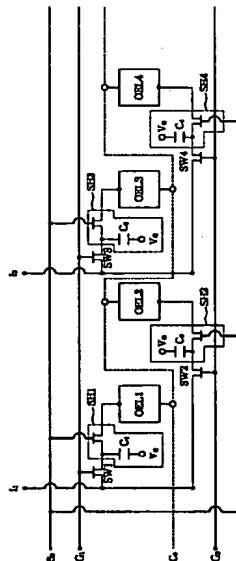
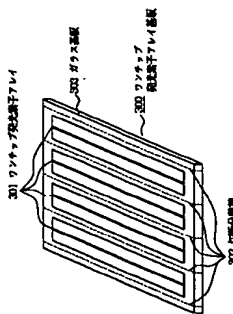
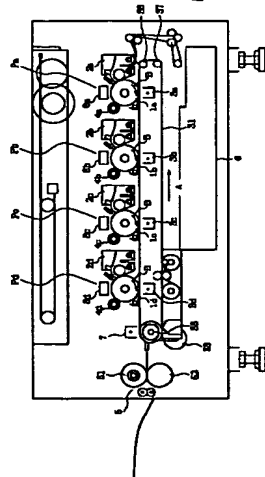
### 303 ガラス基板

43

801	基板
802	ゲート電極
803	ゲート絶縁膜
804	障壁半導体
805	ソース電極

44

806、814 ドレイン電極  
807、808 電荷蓄積用キャパシタの一對電極  
809 絶縁膜  
815、816 発光素子用一對電極  
817 発光層











[illegible]

フロントページの続き

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既キャパシタを一意に指定できるように前記同時発光回路を動作させる駆動手段を有する発光装置に、第6の種別を有する。

【手続補正3】	【手続補正3】
【補正対象項目名】明細書	【補正対象項目名】明細書
【補正対象項目番号】0012	【補正対象項目番号】0012
【補正方法】変更	【補正方法】変更
【補正内容】	【補正内容】

【0012】本発明が好ましく第4の態様例では、前記スイッチングチップは、液晶ディスプレイ装置であり、また、液晶スイッチングチップアレイの第1の駆動及び第2の駆動は、それぞれ奇数段及び偶数段である。